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VOLUME 10 PART 4

NORTH AMERICAN FLORA

(AGARICALES)

AGARICACEAE (pars)

AGARICEAE (pars)

WILLIAM ALPHONSO MURRILL

INOCYBE

CALVIN HENRY KAUFFMAN

PHOLIOTA

LEE ORAS OVERHOLTS

PUBLISHED BY

THE NEW YORK BOTANICAL GARDEN

NOVEMBER 29, 1924

ANNOUNCEMENT

NORTH AMERICAN FLORA is designed to present in one work descriptions of all plants growing, independent of cultivation, in North America, here taken to include Greenland, Central America, the Republic of Panama, and the West Indies, except Trinidad, Tobago, and Curaçao and other islands off the north coast of Venezuela, whose flora is essentially South American.

The work will be published in parts at irregular intervals, by the New York Botanical Garden, through the aid of the income of the David Lydig Fund bequeathed by Charles P. Daly.

It is planned to issue parts as rapidly as they can be prepared, the extent of the work making it possible to commence publication at any number of points. The completed work will form a series of volumes with the following sequence:

Volume 1. Myxomycetes, Schizophyta.

Volumes 2 to 10. Fungi.

Volumes 11 to 13. Algae.

Volumes 14 and 15. Bryophyta.

Volume 16. Pteridophyta and Gymnospermae.

Volumes 17 to 19. Monocotyledones

Volumes 20 to 34. Dicotyledones.

The preparation of the work has been referred by the Scientific Directors of the Garden to a committee consisting of Dr. N. L. Britton, Dr. W. A. Murrill, and Dr. J. H. Barnhart.

Professor John M. Coulter, of the University of Chicago; Mr. Frederick V. Coville, of the United States Department of Agriculture; and Professor William Trelease, of the University of Illinois, have consented to act as an advisory committee.

Each author will be wholly responsible for his own contributions, being restricted only by the general style adopted for the work, which must vary somewhat in the treatment of diverse groups.

The subscription price is fixed at $1.50 for each part; it is expected that four or more parts will be required for each volume. A limited number of separate parts will be sold at $2.00 each. Address:

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50. **Hebeloma cubense** Murrill, sp. nov.

Pileus fleshy, convex, gregarious, 2 cm. broad; surface floccose with the remains of the veil, not striate, chestnut-brown; lamellae short-decurrent, crowded, broad, cinnamon, eroded on the edges; spores ellipsoid, regular, smooth, melleous under the microscope, 11–12 × 7–8 μ; stipe flexuous, tough, fibrous, cylindric, floccose-fibrillose, pale-brown, solid, whitened below, 4 cm. long, 3–4 mm. thick; veil white, floccose, appendiculate.

Type collected on soil in a garden at Herradura, Cuba, June 15, 1907, *F. S. Earle 560* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

DOUBTFUL AND EXCLUDED SPECIES

Hebeloma erysibodes (Mont.) Sacc. Syll. Fung. **5**: 795. 1887. (*Agaricus erysibodes* Mont. Syll. Crypt. 117. 1856.) Described from specimens collected among mosses on shaded ground at Columbus, Ohio. When examining the type of this species at Paris some years ago, I made a record that the specimens were well preserved and very much resembled one of our common wood-loving species of *Gymnopilus*.

Hebeloma firmum (Pers.) Gill. Champ. Fr. 523. 1876. (*Agaricus firmus* Pers. Ic. Descr. Fung. 14. 1798.) Reported from New York by Peck. There is one sheet of specimens at Albany bearing this name.

Hebeloma glutinosum (Lindgr.) Sacc. Syll. Fung. **5**: 793. 1887. (*Agaricus glutinosus* Lindgr. Bot. Not. **1845**: 199. 1845.) Reported from New York and New Jersey. The specimens so named by Peck at Albany do not at all correspond with Fries' figures and are perhaps referable to *Hebeloma commune*.

Hebeloma ischnostylum (Cooke) Sacc. Syll. Fung. **5**: 802. 1887. (*Agaricus ischnostylus* Cooke, Grevillea **12**: 98. 1894.) Reported from California by McClatchie and from Oregon by Lane. The species was described from England and probably does not occur in North America.

Hebeloma latericolor (Mont.) Sacc. Syll. Fung. **5**: 803. 1887. (*Agaricus latericolor* Mont. Syll. Crypt. 118. 1856.) Described from specimens collected about the roots of trees at Columbus, Ohio. The types at Paris are well preserved and resemble *Hypholoma perplexum* more than they do any species of *Hebeloma*.

Hebeloma longicaudum (Pers.) Quél. Champ. Jura Vosg. 334. 1873. (*Agaricus longicaudus* Pers. Syn. Fung. 332. 1801.) Reported from New York, Michigan, Mexico, and elsewhere, but I have not been able to connect these collections definitely with the European plant.

Hebeloma mussivum (Fries) Sacc. Syll. Fung. **5**: 292. 1887. (*Agaricus mussivus* Fries, Epicr. Myc. 178. 1838.) Reported from North America by a few collectors.

Hebeloma pyrrholepidum (Mont.) Sacc. Syll. Fung. **5**: 798. 1887. (*Agaricus pyrrholepis* Mont. Syll. Crypt. 116. 1856.) Described from specimens collected on grassy ground at Columbus, Ohio. My notes made in Paris are as follows: "Apparently *Inocybe* and much like *Lepiota granulosa*. Both the collections, nos. 116 and 158, are well preserved."

Hebeloma venifer (Berk. & Curt.) Sacc. Syll. Fung. **5**: 803. 1887. (*Agaricus venifer* Berk. & Curt. Proc. Am. Acad. **4**: 116. 1858.) Described from Arakamtchetchene Island, Bering Strait. The description is inadequate and I have not seen the type.

Hebeloma versipelle (Fries) Gill. Champ. Fr. 524. 1876. (*Agaricus versipellis* Fries, Epicr. Myc. 179. 1838.) Reported from New Jersey and elsewhere in the United States, but probably confused with *H. mesophaeum*, which is so closely related as to be scarcely distinguishable, especially in the dried state.

73. INOCYBE* (Fries) Quél. Champ. Jura Vosg. 151. 1872.

Agaricus § *Inocybe* Fries, Syst. Myc. **1**: 254. 1821.
Astrosporina Schroet. Krypt.-Fl. Schles. **3**[1]: 576. 1889.
Agmocybe Earle, Bull. N. Y. Bot. Gard. **5**: 439. 1909.
Inocibium Earle, Bull. N. Y. Bot. Gard. **5**: 439. 1909.

Pileus fleshy, putrescent, subconic at first, then campanulate to subexpanded, innately silky, fibrillose or fibrillose-squamulose, dry or rarely viscid; cortina subsilky or fibrillose, more

* By CALVIN HENRY KAUFFMAN.

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or less evanescent; lamellae adnate or adnexed; stipe central, fleshy-fibrous; volva none; spores some pale shade of brown, yellowish-brown, or fuscous, angular or even, the epispore tuberculate, spiny or smooth; cystidia present or absent; sterile cells on the specialized edges of the lamellae.

Type species, *Inocybe relicina* (Fries) Quél.

Spores angular, tuberculate, or spiny.
- Spores spiny or nodulose, not truly angular; pileus some shade of brown.
  - Stipe with emarginate or subemarginate bulb; cystidia abundant, thick-walled.
    - Pileus 1–2 cm. broad. — 1. *I. intricata.*
    - Pileus 2–5 cm. broad. — 2. *I. asterospora.*
  - Stipe without emarginate bulb; cystidia scattered to few, thin-walled.
    - Pileus squarrose-scaly, fuscous-rufescent. — 3. *I. calospora.*
    - Pileus appressed-scaly, cinnamon to ochraceous-tawny. — 4. *I. subfulva.*

Spores angular or usually angular-tuberculate.
- Cystidia present on sides of lamellae.
  - Pileus yellowish-tan, the umbo tawny; cystidia thick-walled. — 6. *I. trechispora.*
  - Pileus deep-chrome, the umbo paler; cystidia thin-walled. — 5. *I. Davisiana.*
  - Pileus brown, squarrose-scaly.
    - Spores 5–7 × 4–5 μ; pileus dark-brown, becoming blackish on drying. — 7. *I. stellatospora.*
    - Spores larger; pileus some shade of brown.
      - Growing on very decayed or mossy wood; lamellae rufescent; spores 9–12 (–15) × 7–9 μ. — 8. *I. lanuginosa.*
      - Growing on the ground; lamellae brunnescent; spores 7–10 × 6–8 μ. — 9. *I. longicystis.*
  - Pileus brown, gray, or white, not regularly squarrose-scaly.
    - Pileus appressed-fibrillose-scaly or lacerate-scaly.
      - Spores unevenly angular, not nodulose; pileus brown; cystidia thin-walled. — 10. *I. maritimoides.*
      - Spores angular-tuberculate.
        - Cystidia thin-walled.
          - Pileus tawny, minutely scaly; native of Jamaica. — 11. *I. jamaicensis.*
          - Pileus wood-brown, subscaly to subrimose; native of northern United States. — 12. *I. decipientoides.*
        - Cystidia thick-walled.
          - Growing on rotten wood; pileus pale-chestnut, fading, small. — 13. *I. tubarioides.*
          - Growing on the ground.
            - Stipe with emarginate bulb, pallid then blackish; pileus grayish-brown. — 14. *I. nigrescens.*
            - Stipe without emarginate bulb.
              - Pileus gray-fibrillose; stipe short. — 15. *I. cicatricata.*
              - Pileus dark-brown; lamellae narrow. — 9. *I. longicystis.*

Pileus definitely rimose or innate-silky.
- Pileus rimose.
  - Pileus 3–6 (–8) cm. broad.
    - Pileus creamy-white; spores elongate. — 16. *I. fibrosa.*
    - Pileus grayish to smoky-gray; spores subspheroid. — 17. *I. californica.*
  - Pileus not more than 4 cm. broad.
    - Pileus small, 1–2.5 cm. broad; stipe bulbillate, the bulb more or less emarginate.
      - Pileus grayish or avellaneous.
        - Pileus covered with gray fibrils; spores 7–9 (–10) × 5–6 μ. — 15. *I. cicatricata.*
        - Pileus subglabrous, the umbo naked; spores 6–7 (–8) × 5–6 μ. — 18. *I. albodisca.*
      - Pileus not grayish.
        - Cystidia thin-walled; pileus chestnut-brown to raw-umber. — 19. *I. umbrina.*
        - Cystidia thick-walled.
          - Pileus chestnut-brown. — 20. *I. castanea.*
          - Pileus ochraceous-tawny to pinkish-tan. — 21. *I. Earleana.*
    - Pileus medium, 2–4 (–5) cm. broad.
      - Pileus yellow-ochraceous to subalutaceous; stipe with emarginate bulb. — 22. *I. praetervisa.*
      - Pileus some shade of brown or fuscous; cystidia thin-walled.
        - Stipe with emarginate-depressed bulb; pileus raw-umber-colored. — 23. *I. nodulosa.*
        - Stipe with more or less rounded bulb.

Spores 7–11 × 5–6 μ; cystidia long-pedicellate. 25. *I. radiata.*
Spores 6–8 × 4–6 μ; cystidia short-pedicellate. 24. *I. prominens.*
Pileus innately silky-fibrillose or minutely subfloccose.
Growing on rotten wood; pileus pale-chestnut, fading. 13. *I. tubarioides.*
Growing on the ground.
Pileus medium to large, 2.5–5 (–6) cm. broad.
Spores 9–13 (–15) μ long.
Cystidia thin-walled; pileus wood-brown to tawny. 12. *I. decipientoides.*
Cystidia thick-walled; pileus ochraceous-cinnamon. 26. *I. decipiens.*
Spores not more than 10 μ long.
Plant entirely white or whitish. 27. *I. fallax.*
Plant some other color.
Spores 5–7 (–8) × 4–5 (–6) μ; pileus isabelline, rusty-hued on disk. 28. *I. abundans.*
Spores 7–9.5 × 6–7 μ; pileus whitish, streaked-fulvous or reddish. 29. *I. repanda.*
Pileus small, 0.5–2.5 cm. broad.
Pileus rarely more than 12 mm. broad.
Pileus pale-chestnut, lutescent. 30. *I. subexilis.*
Pileus gray, with a blackish-brown disk. 31. *I. nigrodisca.*
Pileus 1–3.5 cm. broad.
Pileus whitish or pale-cinereous.
Spores elongate, angular-subfusiform; pileus silvery-gray. 32. *I. alabamensis.*
Spores subspheroid to short-subrectangular.
Pileus often reddish-brown on the disk. 33. *I. infida.*
Pileus nearly unicolorous.
Stipe with emarginate bulb; lamellae very crowded. 34. *I. umbratica.*
Stipe equal; lamellae close. 35. *I. paludinella.*
Pileus some shade of brown, tawny, or ochraceous.
Cystidia thick-walled; pileus isabelline. 28. *I. abundans.*
Cystidia thin-walled; pileus clay-colored to subochraceous.
Stipe white; spores 8–10 (–12) × 5–6 (–7) μ. 36. *I. paludosella.*
Stipe yellowish-brownish; spores 6–8 (–9) × 4–6 μ. 37. *I. ventricosa.*
Cystidia lacking on sides of lamellae.
Pileus squarrose-scaly, umber-brown; spores 7–11 × 5–7 (–8) μ. 38. *I. leptophylla.*
Pileus appressed-fibrillose-scaly.
Pileus 3–6 cm. broad, brown; spores irregularly elongate, 8–10 × 4–6 μ. 39. *I. acystidiosa.*
Pileus 1–2.5 cm. broad, tawny or brown; spores subspheroid, 10–12 (–13) × 9–10 (–11) μ. 4. *I. subfulva.*
Spores smooth.
Cystidia present on sides of lamellae.
Pileus viscid, pale-clay-colored; plants stout. 40. *I. olpidiocystis.*
Pileus not viscid.
Pileus squarrose-scaly or appressed-fibrillose-scaly.
Pileus squarrose-scaly, 2–5 (–8) cm. broad, brown. 41. *I. Hystrix.*
Pileus appressed-fibrillose-scaly or lacerate-scaly.
Stipe more or less violaceous.
Pileus at first violaceous, soon becoming grayish-fuscous; cystidia with yellowish-tinted content. 42. *I. cincinnata.*
Pileus clay-colored to raw-sienna; cystidia hyaline. 43. *I. violaceoalbipes.*
Stipe not violaceous.
Pileus cinereous, 6–12 mm. broad; lamellae broad; cystidia thin-walled. 44. *I. griseoscabrosa.*
Pileus some other color.
Pileus whitish-lutescent, yellow, ochraceous to tawny.
Pileus 3–5 (–7) cm. broad, whitish to cream-colored.
Flesh rubescent where cut; odor sweetish, of fruits; spores 8–10.5 × 5–6 μ. 45. *I. pyriodora.*

Flesh unchanging; stipe subventricose-subradicate; spores 10–12 (–14) × 5–6 (–7) μ. — 46. *I. Bakeri.*
Pileus smaller, not more than 3.5 cm. broad.
Stem rubescent where cut; pileus yellowish; cystidia thin-walled. — 47. *I. rubellipes.*
Stem unchanging when cut.
Cystidia thick-walled.
Spores 8–11 (–12) × 4–5 (–6) μ; pileus straw-yellow. — 48. *I. hirtella.*
Spores 8–9.5 (–10) × 5–5.5 (–6) μ; pileus ochraceous-tawny. — 49. *I. ochraceomarginata.*
Cystidia thin-walled, scattered.
Cystidia short, 30–40 μ long; pileus 1–3 cm. broad. — 50. *I. cylindrocystis.*
Cystidia long, 60–90 μ; pileus 8–15 mm. broad. — 51. *I. squamosa.*
Pileus brown or umber, 1–3.5 cm. broad.
Cystidia thin-walled.
Spores elongate-subcylindric, 10–13 (–20) × 4–5.5 (–6) μ; lamellae broad. — 52. *I. lacera.*
Spores ellipsoid, 7–9 × 4–5 μ; lamellae narrow. — 53. *I. leptocystis.*
Cystidia thick-walled.
Plants small; pileus 5–15 mm. broad.
Stem hollow, tinged brown. — 54. *I. flocculosa.*
Stem solid, pallid. — 55. *I. minima.*
Plants larger; pileus 1–3.5 cm. broad.
Stipe turning blackish on aging; pileus yellowish then umber. — 56. *I. atripes.*
Stipe fibrillose-reticulate; spores 9–12 × 5–6 μ. — 57. *I. retipes.*
Pileus rimose or silky-fibrillose.
Stipe long and subventricose; pileus cream-colored to isabelline, 3–6 cm. broad. — 58. *I. longipes.*
Stipe more typical.
Pileus rimose, brown, fuscous or ochraceous-tawny; cystidia thick-walled.
Pileus 3–5 cm. broad, subrimose; lamellae narrow. — 59. *I. excoriata.*
Pileus 1–3 (–4) cm. broad.
Stipe with tinge of rufous.
Spores 8–10 × 5–5.5 μ; lamellae medium-broad; pileus becoming sublacerate-scaly. — 60. *I. subdestricta.*
Spores 6–7 × 5–6 μ; pileus distinctly rimose. — 61. *I. ovalispora.*
Stipe white or pallid, sometimes slightly lutescent.
Spores 9–11 (–13) × 4.5–6 μ; lamellae broad, attenuate-adnexed. — 62. *I. rimosa.*
Spores 7–9 (–10) × 4.5–5.5 μ.
Pileus clay-colored, brown to umber, subrimose. — 63. *I. pallidipes.*
Pileus fawn-colored to wood-brown; cystidia very abundant. — 64. *I. eutheloides.*
Pileus innately fibrillose-silky, or slightly flocculose, or minutely subscaly.
Pileus, stipe, or lamellae violaceous or lilac-colored.
Pileus grayish, minutely flocculose-fibrillose; lamellae pale-violet at first. — 65. *I. violaceifolia.*
Pileus and stem light-vinaceous-purple (R)*, appressed-silky. — 66. *I. lilacina.*
Pileus, stipe, and lamellae without violaceous color.
Pileus white or whitish, sometimes tinted lutescent or rubescent on aging.
Pileus, stipe and lamellae slowly staining to pale-reddish or flesh-colored; spores 8–10 (–12) × 5–6 μ. — 67. *I. Godeyi.*
Pileus not rubescent.
Spores 10–16 (–18) × 6–8 μ; pileus 3–7 (–10) cm. broad. — 68. *I. serotina.*
Spores not more than 10 μ long.
Growing on decayed wood; pileus 4–8 mm. broad. — 69. *I. comatella.*
Growing on the ground.
Pileus 3–6 cm. broad.
Umbo of pileus grayish-green to olivaceous; odor unique. — 70. *I. corydalina.*

* "(R)" after a color-name refers to Robert Ridgway's "Color standards and color nomenclature" (1912).

Umbo not greenish.
Cystidia thick-walled, abundant; pileus floccose at first; spores 8–10 × 5–6 μ. — 71. *I. sindonia.*
Cystidia thin-walled, scattered; pileus chalky-white; spores 8–9 × 4.5–5.5 μ. — 72. *I. insinuata.*
Pileus 1.5–2.5 cm. broad.
Stipe 2–3 mm. thick; pileus glossy-silky; cortina evanescent. — 73. *I. geophylla.*
Stipe 4–6 mm. thick; pileus subsilky; cortina profuse. — 74. *I. sambucella.*
Pileus colored, not mainly white.
Pileus some shade of brown, fuscous, or fawn-colored.
Pileus small, up to 15 mm. broad, tawny-brown. — 55. *I. minima.*
Pileus 1–3.5 cm. broad.
Stipe white; pileus brown to umber. — 63. *I. pallidipes.*
Stipe same color as pileus or a paler shade.
Stipe very slender, 1–2 mm. thick.
Cystidia thick-walled, abundant; pileus and stipe fuscous-brown; spores 10–13 × 5–6 μ. — 75. *I. scabella.*
Cystidia thin-walled, scattered; pileus and stipe pale-rufous; spores 9–11 (–13) × 5–6.5 μ. — 76. *I. rufidula.*
Stipe 2–4 mm. thick.
Cystidia slender, 70–95 μ long; pileus tawny-olive to cinnamon. — 77. *I. pallidobrunnea.*
Cystidia shorter, averaging 50–60 μ long.
Cystidia thick-walled, abundant; pileus streaked with agglutinate fibrils. — 78. *I. agglutinata.*
Cystidia thin-walled, scattered; pileus virgate, the umbo blackish-brown. — 79. *I. virgata.*
Pileus yellowish, ochraceous, or pale-clay-colored.
Pileus 3–7 (–10) cm. broad, sordid-ochraceous-tan; bulb of stem enlarged with intergrown sand. — 68. *I. serotina.*
Pileus 2–3.5 cm. broad.
Cystidia thin-walled, scattered; odor farinaceous; pileus yellow-ochre. — 80. *I. connexa.*
Cystidia thick-walled, abundant.
Pileus ochraceous, fleshy; stipe rather stout and firm; cystidia often with yellowish content, fusoid. — 81. *I. subochracea.*
Pileus clay-colored, thinner; cystidia hyaline, ventricose. — 82. *I. submuricellata.*

Cystidia lacking on sides of lamellae.
Pileus squarrose-scaly, fibrillose-appressed-scaly, or tomentose-fibrillose.
Pileus at length squarrose-scaly, color some shade of brown, tawny to pale-ochraceous.
Spores elongate-suboblong, narrow, 9–13 × 3.5–5 μ; pileus ochraceous-tawny to Dresden-brown (R). — 83. *I. marmoripes.*
Spores subreniform.
Stipe 4–8 cm. long; pileus dark-brown to bister.
Base of stipe greenish-blue; pileus 1–4 cm. broad. — 84. *I. calamistrata.*
Base of stipe concolorous; pileus 1.5–2.5 cm. broad. — 85. *I. mutata.*
Stipe 2–4 cm. long.
Spores 8–10 × 5–6 μ, not very variable; pileus tawny to ochraceous-buff. — 86. *I. Caesariata.*
Spores longer and more variable in size.
Spores 8–10 (–12) × 5–5.5 μ; pileus tawny, yellowish-brown, the color persisting on drying. — 87. *I. Lorillardiana.*
Spores 9–12 × 5–5.5 (–6) μ; pileus honey-yellow to grayish-ochraceous, fading on drying. — 88. *I. unicolor.*

Pileus tomentose-fibrillose, or becoming appressed-scaly or lacerate.
Flesh becoming reddish or purplish.
Pileus 1.5–2.5 cm. broad, at first dull-ochraceous, rubescent; spores 12–15 (–17) × 6–7 (–8) μ. 89. *I. subrubescens.*
Pileus 3–6 (–8) cm. broad, at first with innate brown-purplish to reddish-chestnut fibrils, or subscaly; spores 10–12 × 6–7 μ. 90. *I. jurana.*
Flesh not changing to reddish or purplish.
Pileus minute, 3–4 mm. broad, dark-reddish-brown. 91. *I. tenerrima.*
Pileus much larger.
Stipe subperonate by a fibrillose-tomentose to subfloccose-scaly covering.
Spores 8–10 × 5–6 μ, not very variable in size; pileus at first densely tomentose-fibrillose. 86. *I. Caesariata.*
Spores varying, longer.
Spores 8–10 (–12) × 5–5.5 μ; pileus tawny to yellowish-brown, the color persisting on drying. 87. *I. Lorillardiana.*
Spores 9–12 × 5–5.5 (–6) μ; pileus honey-yellow to grayish-ochraceous, fading on drying. 88. *I. unicolor.*
Stipe not subperonate.
Spores 5–6 × 3–4 μ; pileus ferruginous, covered with dense-hairy fasicles. 92. *I. anomala.*
Spores larger.
Lamellae broadly adnate-subdecurrent; stipe hollow; pileus thinly tomentose-subscaly. 93. *I. subdecurrens.*
Lamellae emarginate-adnate; stipe solid; pileus minutely tomentose. 94. *I. subtomentosa.*
Pileus rimose or innately silky.
Pileus at length rimose.
Pileus some shade of yellowish to tawny-ochraceous.
Stipe with an emarginate bulb, lutescent; pileus straw-yellow, becoming subochraceous. 95. *I. Cookei.*
Stipe without emarginate bulb.
Pileus covered with white, hoary-silky fibrils, pale-ochraceous to pale-tawny. 96. *I. lanatodisca.*
Pileus without hoary-silky covering.
Spores subreniform.
Spores 9–12 × 5–6 μ; pileus dull-yellow-ochre to rich-yellow-fuscous, very rimose; lamellae narrow. 97. *I. fastigiata.*
Spores 7–9 (–10) × 4.5–5.5 μ.
Pileus with prominent, often subacute umbo, pale-yellow; lamellae narrow. 98. *I. rimosoides.*
Pileus obtuse or gibbous, tawny-yellowish; lamellae rather broad. 99. *I. Curreyi.*
Spores elongate-ellipsoid, 9–13 (–16) × 5.5–6 (–8) μ; pileus pale-yellowish; lamellae narrow. 100. *I. sororia.*
Pileus umber to brown; spores subreniform.
Spores 7–9 (–10) × 4.5–5.5 μ; pileus tawny-olive to brown; lamellae narrow. 101. *I. fastigiella.*
Spores 10–12 (–13) × 5.5–6.5 (–7) μ; pileus dark-umber-brown; lamellae crowded. 102. *I. umbrinella.*
Pileus innately fibrillose-silky or subflocculose.
Spores subreniform.
Pileus ochraceous-buff, diffracted on the disk, 2–5 cm. broad. 103. *I. squamosodisca.*
Pileus brownish to dark-brown.
Pileus 3–7 cm. broad; disk minutely floccose-scaly, firm. 104. *I. brunnescens.*
Pileus 1.5–3.5 cm. broad, subfibrillose, naked on the umbo, soon soft and fragile. 105. *I. glaber.*
Spores ellipsoid, not subreniform.
Spores short-ellipsoid, 7–8.5 (–9) × 5–6 μ; lamellae adnate-emarginate; pileus ochraceous-tawny. 94. *I. subtomentosa.*
Spores variable in size, 8–10 (–12) × 5–5.5 (–6) μ; lamellae broadly adnate-subdecurrent; pileus tawny-olive to cinnamon-buff. 93. *I. subdecurrens.*

1. **Inocybe intricata** Peck, Bull. N. Y. State Mus. 131: 36. 1909.

Pileus thin, conic to convex, expanded, umbonate, 1–2 cm. broad; surface dry, fibrillose, radiately rimose, pale-brown or tawny-brown, shining, the umbo generally darker; cortina evanescent; context white; lamellae adnate or sinuate-adnate, close, whitish then umber; stipe fragile, flexuous, pruinose, stuffed to hollow, bulbillate, the bulblet subemarginate, 3–5

cm. long, 1–2 mm. thick; spores broadly elliptic in outline, scarcely angular, densely and coarsely covered with obtuse nodules, 10–12.5 × 7–8 (–9) μ; cystidia thick-walled, ovoid-lanceolate above a short pedicel, subhyaline, abundant on the sides and the edges of the lamellae, 55–70 × 15–25 (–30) μ.

TYPE LOCALITY: Stow, Massachusetts.
HABITAT: On humus in frondose woods.
DISTRIBUTION: Known only from the type locality.

2. **Inocybe asterospora** Quél. Bull. Soc. Bot. Fr. **26**: 50. 1879.

Clypeus subrimosus P. Karst. Medd. Soc. Faun. Fl. Fenn. **16**: 38. 1889.
Inocybe subrimosa Sacc. Syll. Fung. **9**: 100. 1891.

Pileus rather thin, conic-campanulate to convex-umbonate, 2–5 cm. broad; surface dry, fibrillose, becoming more or less scaly, distinctly rimose, chestnut-brown to cinnamon-rufous (R); context pallid; lamellae narrowly adnate then emarginate, broad, ventricose, close, at length olivaceous-cinnamon or grayish-brown, the edges fimbriate; stipe equal above the depressed-emarginate, rather prominent bulb, innately striatulate, mealy-pubescent, solid, rufescent, 4–6 cm. long, 2.5–6 mm. thick; spores spheroid to broad-elliptic in outline, covered with blunt, subcylindric nodules, 9–11 (–12) × 8–10 μ, or 9–11 μ in diameter; cystidia stout, subovoid to ventricose-sublanceolate or subfusoid, obtuse, hyaline at the apex, sessile or with a short pedicel, thick-walled, thicker upward, abundant on the sides and the edges of the lamellae, 50–75 × 15–25 μ.

TYPE LOCALITY: France.
HABITAT: On the ground in frondose and mixed woods.
DISTRIBUTION: New England to Virginia, and westward to Wisconsin and Missouri; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 385 (430)*; Pat. Tab. Fung. f. *546;* Ricken, Blätterp. Deutschl. *pl. 29, f. 1;* Rolland, Atl. Champ. *pl. 67, f. 148.*

3. **Inocybe calospora** Quél.; Bres. Fungi Trid. 1: 19. 1882.

Inocybe rigidipes Peck, Ann. Rep. N. Y. State Mus. **51**: 289. 1898.

Pileus thin, conic-campanulate then expanded, umbonate, 1–3 cm. broad; surface dry, covered, except on the umbo, with loose or squarrose-fibrillose scales, sometimes squamose or rimose, fuscous-rufescent, the umbo darker; margin fibrillose and paler; lamellae adnexed to almost free, rather narrow, subventricose, pallid then pale-fuscous-cinnamon, the edges white-fimbriate; stipe firm, rigid-elastic, at length flexuous, subequal, stuffed to hollow, pale-brown, rufescent, pruinose throughout, bulbillate, 3–6 cm. long, 1.5–2.5 mm. thick; spores spheric or subspheroid, 9–12 μ in diameter (incl. aculeae), covered with cylindric, blunt aculeae; cystidia subcylindric to subventricose, thin-walled, few or scattered on the sides, subfusoid and with the wall slightly thickened, hyaline, numerous on the edges of the lamellae, 40–55 × 8–12 μ; sterile cells cyst-like, on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: Grassy places in low woods.
DISTRIBUTION: Eastern North America, southward to Florida and westward to Missouri; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 21;* Gill. Champ. Fr. *pl. 349 (361);* C. H. Kauffman, Agar. Mich. *pl. 91.*

4. **Inocybe subfulva** Peck, Ann. Rep. N. Y. State Mus. **41**: 66. 1888.

Inocybe echinocarpa Ellis & Ev. Jour. Myc. **5**: 26. 1889.

Pileus thin, broadly subconic, soon convex, subumbonate to umbonate, 1–2.5 cm. broad; surface dry, with dense-appressed-fibrillose scales, cinnamon-brown to ochraceous-tawny; context white; lamellae adnexed, rounded behind, subventricose, close, whitish at first, then tawny cinnamon, the edges entire; stipe equal, firm, solid, tough, pruinose at the apex, slightly fibrillose below, concolorous or paler, 2–5 cm. long, 2–3 mm. thick; spores subglobose or short-elliptic, not angular, covered equally with spines which are subacute, broader at the base, sometimes slightly stouter and more obtuse, 10–12 (–13) × 9–10 (–11) μ; genuine cystidia none;

sterile cells cyst-like, clavate to subventricose, obtuse, short, widely scattered on the hymenium 36 × 10–12 μ; basidia 28–30 × 8–10 μ.

TYPE LOCALITY: Selkirk, New York.
HABITAT: In the grass or on the bare ground along roadsides.
DISTRIBUTION: New England and New York to South Carolina and Mississippi.

5. **Inocybe Davisiana** C. H. Kauffman, sp. nov.

Pileus thin, subconic then convex-expanded, broadly umbonate, 0.5–3 cm. broad; surface viscid to subviscid, silky when dry, when very young deep Brussels-brown (R), then deep-chrome (R), the umbo at length pale-ochraceous or maize-yellow; margin at length slightly subrimose; context whitish or tinged yellowish; lamellae sinuate-adnexed, moderately broad toward the front, close, whitish then buffy-brown (R); stipe equal above the rounded bulblet, solid, innately fibrillose-silky, pruinose at the apex, Mars-yellow (R), flavescent, white-mycelioid at the base, 3–6 cm. long, 2–3.5 mm. thick; spores irregularly angular-tuberculate, covered with nodules which are rather distinct and usually obtuse, subhexagonal or subspheroid, 7–9 × 4–7 μ; cystidia thin-walled, scattered to few, subventricose-subcylindric, tapering to a pedicel, usually rounded above, rarely abruptly narrow-necked, hyaline, 45–65 × 15–20 μ; sterile cells cyst-like, broadly clavate, on the edges of the lamellae.

Type collected in moist places under pine trees and sphagnum at Stow, Massachusetts, June 13, 1918, *Simon Davis* (herb. Univ. Mich.).
DISTRIBUTION: Known only from the type locality.

6. **Inocybe trechispora** (Berk.) P. Karst. Bidr. Finl. Nat. Folk **32**: 465. 1879.

Agaricus (*Hebeloma*) *trechisporus* Berk. Outl. Brit. Fungol. 156. 1860.

Pileus thin, subconic to campanulate-convex, then expanded-plane, umbonate, 2–2.5 cm. broad; surface viscid, silky when dry, the umbo tawny, elsewhere paler, pale-stramineous to tan or tinged wood-brown (R); lamellae sinuate-adnexed, of medium width, close, white then grayish-brownish, the edges white-fimbriate; stipe tapering slightly upward above the emarginate bulb, pruinose above, solid, innately striatulate, white, sublutescent, 2–5 cm. long, 2–4 mm. thick; spores angular-tuberculate, covered with distinct, subelliptic-subrectangular nodules, 6–8 (–9) × 4–6 (–7) μ; cystidia short, obese, thick-walled, short-flask-shaped above the short pedicel, hyaline, abundant on the edges, moderately abundant on the sides of the lamellae, 45–50 × 15–24 μ.

TYPE LOCALITY: England.
HABITAT: On low, swampy ground.
DISTRIBUTION: New England to North Carolina, and westward to Michigan, Tennessee, and Alabama; also in Europe.
ILLUSTRATIONS: Berk. Outl. Brit. Fungol. *pl. 8, f. 6;* Cooke, Brit. Fungi *pl. 403 (443) A.*

7. **Inocybe stellatospora** (Peck) Massee, Ann. Bot. **18**: 469. 1904.

Agaricus (*Hebeloma*) *stellatosporus* Peck, Ann. Rep. N. Y. State Mus. **26**: 57. 1874.
Hebeloma stellastosporum Sacc. Syll. Fung. **5**: 798. 1887.

Pileus thin, convex to nearly plane, obtuse, dry, 2–5 cm. broad; surface dry, densely covered with squarrose scales, dark-brown, becoming smoky-umber when dried; lamellae adnate then emarginate, close, broad, pallid at first, then brown, drying to smoky-cinereous; stipe equal, firm, solid, squamose to squarrose-scaly, subglabrescent, fibrillose at the apex, colored like the pileus, 4–6 cm. long, 2.5 mm. thick; spores minute, usually irregularly tuberculate-angular, subglobose, or subrectangular, covered with indistinct nodules, 5–7 × 4–5 μ; cystidia subventricose, sometimes capitate, rather stout, scattered on the sides of the lamellae, 65–75 × 15–20 μ; sterile cells cyst-like, on the edges of the lamellae.

TYPE LOCALITY: Croghan, New York.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: New York to Virginia.

8. **Inocybe lanuginosa** (Bull.) Sacc. Syll. Fung. 5: 765. 1887.

Agaricus lanuginosus Bull. Herb. Champ. Fr. *pl. 370.* 1787.
Agaricus sabuletorum Berk & Curt. Grevillea 19. 103. 1891.
Inocybe sabuletorum Sacc. Syll. Fung. 11: 51. 1895.

Pileus slightly fleshy, hemispheric or campanulate, then expanded and umbonate, 2–3 cm. broad; surface dry, densely flocculose-squamose or squarrose-scaly, especially on the disk, umber-colored to tawny; cortina grayish-white, evanescent; context pallid; lamellae adnexed. seceding, close, rounded behind, pallid-clay-colored then bright-cinnamon, the edges white-flocculose; stipe equal, stuffed then hollow, fibrillose-subscaly, subconcolorous, paler and naked at the apex, 2–4 cm. long, 2.5–3 mm. thick; spores elliptic-subglobose, prominently covered with blunt nodules, sometimes subglobose and stellate, 9–12 (–15) × 7–9 μ (incl. aculeae); cystidia broadly subcylindric, some subventricose, on a short pedicel, thin-walled, hyaline, scattered to few, rarely more numerous on the sides, rather abundant on the edges of the lamellae, 50–65 × 15–25 μ; sterile cells numerous on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: On mossy, very rotten wood.
DISTRIBUTION: New York, Washington, Oregon, and Idaho; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 117;* Cooke, Brit. Fungi *pl. 425 (409) B;* Pat. Tab. Fung *550;* Ricken, Blätterp. Deutschl. *pl. 29, f. 7.*

9. **Inocybe longicystis** Atk. Am. Jour. Bot. 5: 213. 1918.

Pileus obtusely subconic then campanulate to convex, obsoletely umbonate, rather thin, 1–2.5 cm. broad; surface dry, snuff-brown (R) to bister, tomentose-fibrillose then lacerate-scaly or appressed-scaly, often squarrose-scaly on the disk; context whitish, brown-tinged with age; lamellae adnexed, mostly rather narrow, ventricose, subdistant, grayish-pallid then snuff-brown, the edges white-fimbriate; stipe equal, solid, with fibrillose covering, then somewhat scaly below, subglabrescent, pallid above, concolorous below, pallid within, becoming brown on exposure, 4–5 cm. long, 3–5 mm. thick; spores tuberculate-angular, subrectangular to subspheroid, covered with distinct nodules, 7–9 (–10) × 5–7 (–8) μ; cystidia subcylindric-subventricose, sometimes much elongated on the edges of the lamellae, thin-walled, some slightly thick-walled, hyaline, scattered on the sides, abundant on the edges of the lamellae, 50–70 × 15–20 μ; sterile cells present on the edges of the lamellae.

TYPE LOCALITY: Seventh Lake, Adirondack Mountains, New York.
HABITAT: On leaf-mold, mosses, and soil in mixed woods.
DISTRIBUTION: Massachusetts, New York, and Michigan.

10. **Inocybe maritimoides** (Peck) Sacc. Syll. Fung. 5: 771. 1877.

Agaricus (Inocybe) maritimoides Peck, Ann. Rep. N. Y. State Mus. 38: 87. 1885.

Pileus rather thin, subconic then convex, obtuse, 1–2.5 cm. broad; surface dry, covered with dense-appressed-fibrillose scales, which are sometimes erect on the disk, dark-brown, becoming wood-brown (R) when dried; margin fibrillose; lamellae adnexed, rounded behind, close, ventricose, whitish becoming brownish-ochraceous; stipe equal, solid, fibrillose, paler than the pileus, 2–3 cm. long, 3–4 mm. thick; spores subrectangular in outline, sometimes subquadrate, not tuberculate, 6–8 (–9) × 4–5 (–6) μ, pale under the microscope; cystidia thin-walled, hyaline, subcylindric above a short pedicel, rounded above and sometimes with the wall slightly thickened, scattered on the sides and the edges of the lamellae, 50–60 × 12–15 μ.

TYPE LOCALITY: Karner, New York.
HABITAT: On sandy soil in woods.
DISTRIBUTION: Known only from the type locality.

11. **Inocybe jamaicensis** Murrill, Mycologia 4: 82. 1912.

Pileus convex, gregarious, 2–3 cm. broad; surface minutely appressed-fibrillose-scaly, tawny, the umbo prominent, especially when young; margin fading to isabelline with age; lamellae adnate, distant, dirty-white; stipe equal or slightly larger above, avellaneous to brownish below, nearly white above, 3–4 cm. long, 3–5 mm. thick; spores angular-tuberculate, irregularly subrectangular-ellipsoid, covered with short, obtuse nodules, 8–11 (–12) × 5–7 (–8) μ; cystidia thin-walled, inflated-obovoid, acute or apiculate above, tapering to a slender pedicel,

medium-abundant to scattered on the sides, more on the edges of the lamellae, 50–60 × 25–28 μ; sterile cells on the edges of the lamellae.

TYPE LOCALITY: Cinchona, Jamaica.
HABITAT: On clayey ground.
DISTRIBUTION: Known only from the type locality.

12. **Inocybe decipientoides** Peck, Bull Torrey Club **34**: 100. 1907.

Inocybe Astoriana Murrill, Mycologia **3**: 104. 1911.
Inocybe ochraceoscabra Atk. Am. Jour. Bot. **5**: 214. 1918.

Pileus rather thin, subconic to campanulate-convex, then expanded and umbonate, 1–3 cm. broad; surface dry, innately fibrillose, often scaly on the disk, sometimes entirely appressed-scaly, wood-brown (R) to tawny (R), the umbo darker; margin white-cortinate, frequently rimose with age, the cortina white, evanescent; context whitish; lamellae adnexed, sinuate, moderately broad, subdistant, whitish then brown, the edges white-fimbriate; stipe equal, subbulbous, stuffed to hollow, fragile, fibrillose, pruinose above, pallid becoming brownish below, 2–4 cm. long, 2–4 mm. thick; spores tuberculate-angular, usually varying ovoid-cuneate or subrectangular, covered with prominent but scattered nodules (frequently a large nodule terminates the narrow end of a spore) variable in size in different collections, 9–11 (–15) × 5–7 (–8) μ; cystidia thin-walled, hyaline, ventricose-elliptic to broadly fusiform above a long, slender pedicel, scattered to subabundant on the sides, abundant on the edges of the lamellae, 50–60 × 15–25 μ; sterile cells abundant on the edges of the lamellae.

TYPE LOCALITY: Boston, Massachusetts.
HABITAT: On lawns, along roadsides, and in swamps.
DISTRIBUTION: Massachusetts to Maryland; and in Washington and Oregon.
ILLUSTRATIONS: Mycologia **1**: *pl. 213, f. 4* (as *Inocybe infida*); Mycologia **3**: *pl. 40, f. 15*.

13. **Inocybe tubarioides** Atk. Am. Jour. Bot. **5**: 217. 1918.

Pileus thin, convex-expanded, 6–12 mm. broad; surface dry, covered with a whitish villosity, becoming minutely fibrillose-scaly as seen under a lens, pale-chestnut, hygrophanous, fading; lamellae adnate, subdecurrent by a tooth, subventricose, subtriangular, not very broad, close; stipe equal, slightly incrassate near the base, solid, loosely covered with scattered white fibrils, pale-chestnut, fading, white-mycelioid at the base, 2–5 cm. long, 2–3 mm. thick; spores angular-tuberculate, covered with minute nodules varying usually subquadrate or subrhomboid, rarely elongate, 5–9 μ in diameter, pale in color; cystidia thin-walled, subclavate-subcylindric to subelliptic, rounded at the apex, tapering to a short pedicel, hyaline, scattered on the sides, more numerous on the edges of the lamellae, 60–75 × 12–16 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On very rotten wood.
DISTRIBUTION: Known only from the type locality.

14. **Inocybe nigrescens** Atk. Am. Jour. Bot. **5**: 214. 1918.

Pileus rather thin, campanulate to convex, then expanded, umbonate, 1.5–3 cm.; surface dry, fibrillose, becoming appressed-fibrillose-scaly, grayish-brown; margin at times faintly rimose; lamellae adnexed, narrow to medium-wide, close, avellaneous to pale-clay-colored; stipe equal above the abrupt, emarginate bulb, pruinose at the apex, slightly villose below, pallid becoming fuscous to bone-brown (R) when dried, 3–4 cm. long, 3–4 mm. thick; spores subglobose to subrectangular in outline, with prominent nodules, 9–10 (–11) × 7–9 μ or 8–10 μ in diameter; cystidia thick-walled, subhyaline or tinted brownish, sessile or with a short pedicel, ventricose-subcylindric, abundant at and near the edges of the lamellae, less numerous elsewhere.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: New York.

15. **Inocybe cicatricata** Ellis & Ev. Jour. Myc. **5**: 25. 1889.

Pileus subconic to conic-campanulate, then convex-expanded, not umbonate, 1–2.5 cm. broad; surface dry, densely gray-fibrillose, becoming rimose with age, glabrous on the disk; context white, compact on the disk; margin thin; lamellae narrowly adnate by a decurrent

tooth, sinuate, rather narrow, pallid then dingy-cinnamon-brown; stipe short, solid, equal above the subbulbous base, pruinose-pubescent throughout, glabrescent, whitish then darker, 1–3 cm. long, 2–4 mm. thick; spores irregularly angular to subrectangular, obscurely tuberculate or covered with tubercles scattered at the angles, 7–9 (–10) × 5–6 (–7) μ; cystidia short, thick-walled, ventricose, elliptic above a short pedicel, hyaline, moderately abundant on the sides and the edges of the lamellae, 45–55 × 15–18 μ.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: On gravelly soil in fields.
DISTRIBUTION: New York, New Jersey, and Mississippi.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1901*.

16. **Inocybe fibrosa** (Sow.) Bres. Fungi Trid. 1: 51. 1884.

Agaricus fibrosus Sow. Engl. Fungi *pl. 414*. 1814.
Agaricus repandus Fries, Syst. Myc. 1: 255. 1821. Not *A. repandus* Bull. 1788.

Pileus fleshy, obtusely campanulate then expanded and broadly umbonate, 4–10 cm. broad; surface dry, silky-fibrillose, at length rimose, creamy-white or tinged straw-colored, sometimes ochraceous-stained; margin lobed, split or recurved; context white, unchanged, the odor somewhat penetrating; lamellae free, rounded behind, broader toward the front, close to crowded, whitish then ashy-cinnamon, the edges white-fimbriate; stipe fibrous, subequal, striatulate to subsulcate, glabrescent, pruinose at the apex, incrassate towards the base, solid, white then sordid, 4–10 cm. long, 6–20 mm. thick; spores angular-oblong, with obscure, scattered tubercles, 9–12 (–13) × 5–7 μ; cystidia broadly subcylindric to subfusoid, moderately abundant on the sides and the edges of the lamellae, 60–90 × 10–15 μ.

TYPE LOCALITY: Austria.
HABITAT: In coniferous and mixed woods.
DISTRIBUTION: New York and Michigan; also Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 454 (424)*; C. H. Kauffman, Agar. Mich. *pl. 94;* Ricken, Blätterp. Deutschl. *pl. 29. f. 8;* Sow. Engl. Fungi *pl. 414*.

17. **Inocybe californica** C. H. Kauffman, sp. nov.

Pileus fleshy on the center, ovoid then campanulate or expanded, umbonate, 2.5–6 cm. broad; surface dry, innately fibrillose, shining, rimose, smoky-cinereous; lamellae sinuate-adnexed, broad, subventricose, close, pale-grayish then cinereous-umber; stipe equal above the abrupt emarginate bulb, solid, glabrous, whitish tinged cinereous, 3–6 cm. long, 3–6 mm. thick; spores polygonal-angular, with obscure tubercles at the angles, globose in outline, 7–10 (–11) μ; cystidia long subcylindric-fusoid, thick-walled, hyaline, on a short pedicel, abundant on the sides and the edges of the lamellae, 65–100 × 12–15 (–18) μ.

Type collected on the ground, campus of the University of California, Berkeley, California, February, 1916, *H. H. Hu 1094* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: California and Oregon.

18. **Inocybe albodisca** Peck, Ann. Rep. N. Y. State Mus. **51**: 290. 1898.

Pileus slightly fleshy, subconic, then campanulate-umbonate or expanded, 1.5–3.5 cm. broad; surface dry, innately silky, the umbo sublubricous, obtuse, at first pale-lilac-incarnate then grayish-drab; margin at length rimose; context whitish, unchangeable; lamellae rather narrow, sinuate-adnexed, close, whitish at first then cinereous-brown, the edges minutely white-fimbriate; stipe equal above the subemarginate bulb, solid, glabrous, even, pruinose at the apex, tinged with the same color as the pileus, fading, 3–5 cm. long, 3–5 mm. thick; spores sinuate-angular, subrectangular to subglobose in outline, obscurely subnodulose, 6–7 (–8) × 5–6 μ; cystidia thick-walled, hyaline, subfusoid-ventricose, abundant on the sides and the edges of the lamellae, 45–60 × 15–18 μ; sterile cells short, clavate, mixed with the cystidia on the edges of the lamellae.

TYPE LOCALITY: North Elba, New York.
HABITAT: On the ground in hemlock or mixed woods.
DISTRIBUTION: New England to Missouri and Washington.

19. **Inocybe umbrina** Bres. Fungi Trid. 1: 50. 1884.

Inocybe castaneoides Peck, Bull. N. Y. State Mus. 167: 43. 1913.

Pileus rather thin, subconic to convex-campanulate, then plane and umbonate, rarely slightly subviscid, 1–3.5 cm. broad; surface fibrillose, at length very long-rimose, sometimes verruculose at the disk, chestnut-brown to raw-umber (R) or Argus-brown (R); context lurid; lamellae sinuate-adnate, rather narrow, close to crowded, pallid-brownish tinged mustard-yellow (R) then cinnamon-brown; stipe equal, slightly bulbous at the base, stuffed then hollow, cortinate-fibrillose, subconcolorous, furfuraceous above, 2–5 (–6) cm. long, 2–5 mm. thick; spores usually angular-tuberculate, subglobose, or subrectangular, with inconspicuous nodules, 6–8 × 4–6 μ; cystidia of thin-walled type, with slightly thickened wall, subventricose-subcylindric above a pedicel, hyaline, scattered to subabundant on the sides, numerous on the edges of the lamellae, 40–55 × 10–15 (–20) μ.

TYPE LOCALITY: Austria.
HABITAT: In frondose or coniferous woods.
DISTRIBUTION: New England to North Carolina and westward to Michigan; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 55*.

20. **Inocybe castanea** Peck, Bull. N. Y. State Mus. 75: 16. 1904.

Pileus rather thin, subconic then campanulate-convex, umbonate; surface dry, innately fibrillose, becoming subrimose, chestnut-brown, 10–16 mm. broad; margin at first incurved; lamellae adnate, thin, narrow, close, whitish then ferruginous-brown; stipe equal, stuffed to hollow, glabrous, subpruinose at the apex, subconcolorous or paler, white-mycelioid at the base, 2–4 cm. long, 2 mm. thick; spores angular-subnodulose, subrectangular, subtriangular to subglobose in outline, scarcely longer than wide, 5–7 (–8) × 4–6 μ; cystidia thick-walled, hyaline, subcylindric-sublanceolate, obtuse, subsessile, rather abundant on the sides and the edges of the lamellae, 55–65 × 12–18 μ.

TYPE LOCALITY: Lake Pleasant, New York.
HABITAT: On the ground under conifers.
DISTRIBUTION: New York to North Carolina.
ILLUSTRATION: Bull. N. Y. State Mus. 75: *pl. O, f. 1–8*.

21. **Inocybe Earleana** C. H. Kauffman, sp. nov.

Pileus thin, subconic to campanulate, then expanded-umbonate, 1–3 cm. broad; surface dry, innately fibrillose, at length subrimose to rimose, pale-ochraceous-tawny to light-pinkish-tan; lamellae adnexed, sinuate, medium-broad, subventricose, whitish then pale-incarnate-cinnamon, the edges white-fimbriate; stipe rather slender, innately silky, equal above the depressed-emarginate, sometimes subvolvate bulb, white or pallid, 3–5 cm. long, 1–3.5 mm. thick; spores angular-tuberculate, small, subrectangular to subglobose, with nodules, 7–8 × 4–6 μ; cystidia stout, thick-walled, ovoid-sublanceolate, obtuse at the apex, with a short pedicel, hyaline, numerous on the sides and the edges of the lamellae, 50–80 × 16–22 (–24) μ.

Type collected on the ground in mixed woods, Auburn, Alabama, May 18, 1902, *F. S. Earle* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Alabama and Tennessee.

22. **Inocybe praetervisa** Quél.; Bres. Fungi Trid. 1: 35. 1883.

Pileus thin, subconic to conic-campanulate, then expanded, umbonate or gibbous, 2–6 cm. broad; surface lubricous or dry, innately fibrillose, glabrous at the disk, soon very long and finely rimose, ochraceous-alutaceous to pale-yellow-ocher (R); margin often lobed or split with age; context whitish, unchanged; lamellae attenuate-adnexed, medium-broad to narrow, crowded, whitish at first then cinereous-cinnamon; stipe equal above the emarginate-bulbous base, terete, solid, glabrous or subfibrillose, pruinose at the apex, whitish then warm-buff (R) or stramineous, 3–7 cm. long, 3–7 mm. thick; spores angular-nodulose, subhexagonal, subtriangular, variable in shape, mostly elongate, with obtuse and rather prominent nodules, 9–12 (–13) × 5–7 (–9) μ; cystidia fusoid-ventricose above a short pedicel, thick-walled, hyaline, scattered to subabundant on the sides, numerous on the edges of the lamellae, 60–85 × 15–25 μ.

TYPE LOCALITY: Austria.
HABITAT: On the ground in coniferous regions.
DISTRIBUTION: Massachusetts, New York, Wyoming, and Washington; also in Europe.
ILLUSTRATIONS: Bres. Fungi. Trid. *pl. 38;* Pat. Tab. Fung. *f. 115*.

23. **Inocybe nodulosa** C. H. Kauffman, sp. nov.

Pileus rather thin, conic to campanulate, then expanded-umbonate, 2–5 cm. broad; surface dry, with appressed fibrils, the umbo glabrous, at length subrimose to rimose, raw-umber (R) on the center; margin paler; context whitish, firm; lamellae adnexed, medium-broad, close, whitish to avellaneous, finally cinnamon-brown; stipe equal above the emarginate-depressed bulb, stuffed, subfibrillose, whitish and pruinose at the apex, yellowish-brown or umber downward to a white-mycelioid bulb, 4–7 cm. long, 2–5 mm. thick; spores angular-nodulose, subquadrate, subtriangular or sometimes subrectangular to subglobose, with coarse, obtuse nodules, often one fourth of the diameter of the spore, 7–9.5 μ in diameter; cystidia thin-walled, subcylindric to subventricose above a short pedicel, rounded above, hyaline, scattered to few on the sides, more numerous on the edges of the lamellae, 50–65 × 12–18 μ.

Type collected on the ground in coniferous woods, Camp Kanosa, Adirondack Mountains, New York, August 25–31, 1915, *W. A. Murrill* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Maine and Canada to New York.

24. **Inocybe prominens** C. H. Kauffman, sp. nov.

Inocybe umboninota Peck, N. Y. State Mus. 139: 58, in part. 1910.

Pileus fleshy, conic to conic-campanulate, often subexpanded, usually prominently umbonate, the umbo acute at first, 2–5 cm. broad; surface dry, innately fibrillose, glabrescent, subrimose to rimose, chestnut-brown (R) to Argus-brown (R), the umbo darker and glabrous; context compact, whitish, unchanged; lamellae adnexed, rather broad, ventricose, at length sinuate, close, white at first, then pale-cinnamon-brown; stipe equal above the bulbous base, the bulb ovoid to subemarginate, persistently stuffed, innately fibrillose-striatulate, whitish when young, becoming brown, white-pruinose upward, white-mycelioid at the base, 4–8 cm. long, 3–8 mm. thick; spores angular-tuberculate, not very distinct, usually subrectangular or irregularly subglobose, 6–8 × 4–6 μ; cystidia thin-walled, subcylindric, rounded at the apex, on a slender pedicel, hyaline, scattered on the sides, abundant on the edges of the lamellae, 55–75 × 12–18 (–22) μ.

Type collected in Ulster County, New York, *Peck* (N. Y. State Herb.)

HABITAT: On the ground in woods.

DISTRIBUTION: Massachusetts, New York, Washington, and Oregon.

25. **Inocybe radiata** Peck, Bull. Torrey Club 22: 488. 1895.

Pileus somewhat fleshy, subconic-campanulate or convex, very umbonate, the umbo obtuse, umber-colored or darker, 2–5 cm. broad; surface dry, covered with appressed brown fibrils, sometimes excoriate, often radiately wrinkled when dried, becoming subrimose to rimose, Brussels-brown (R) to tawny; context whitish, unchanged; lamellae adnate, becoming emarginate, close, broad, whitish then ochraceous-cinnamon to subferruginous, the edges white-fimbriate; stipe equal, stuffed, appressed, silky-fibrillose, subbulbillate and white-mycelioid at the base, concolorous but paler, 3–6 cm. long, 2–4 mm. thick; spores usually angular-tuberculate, subrectangular, or subtriangular, generally narrowed at one end, with distinct nodules, scattered and obtuse, variable in size, 7–9 (–11) × 5–6 μ; cystidia thin-walled, ventricose or ovoid-lanceolate above a long slender pedicel, subacute at the apex, hyaline, scattered to few on the sides, varying to rounded-ovoid and numerous on the edges of the lamellae, 50–65 (–70) × 12–18 (–21) μ.

TYPE LOCALITY: Massachusetts.

HABITAT: On the ground in frondose woods.

DISTRIBUTION: Massachusetts and New York to North Carolina and Michigan.

26. **Inocybe decipiens** Bres. Fungi Trid. 2: 13. 1892.

Pileus slightly fleshy, convex then expanded-umbonate, 2–5 cm. broad; surface silky-flocculose, the umbo glabrous or becoming diffracted-scaly, dry, ochraceous-cinnamon; context whitish, the odor earthy; lamellae sinuate-adnexed, rounded behind, close, broad, ventricose, whitish at first then cinereous, at length lurid-cinnamon, the edges obsoletely fimbriate; stipe stuffed, glabrous, subpruinose at the apex, slightly striate, emarginate-bulbous, whitish or pallid, 4–5 cm. long, 6–9 mm. thick; spores yellowish, angular, nontuberculate or with ob-

solete tubercles, sinuate-elliptic, 10–13 (–15) × 5–7 (–8) μ; cystidia stout, thick-walled upward, with a short pedicel, moderately abundant on the sides, more on the edges of the lamellae, 60–70 × 18–25 μ; sterile cells on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: On the ground in thickets and the edges of fields.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATION: Bres. Fungi Trid. *pl. 118*.

27. **Inocybe fallax** Peck, Bull. N. Y. State Mus. 75: 17. 1904.

Pileus rather fleshy, campanulate or convex, umbonate, 2–5 cm. broad; surface dry, innately fibrillose, sometimes minutely and obscurely scaly, whitish or buff-white, subshining; margin decurved or incurved, often splitting; context white; lamellae slightly adnexed, rounded behind, close, pallid at first, rusty-brownish with age; stipe rather long, equal, hollow, flexuous, minutely pruinose, whitish, 4–6 cm. long, 3–6 (–8) mm. thick; spores usually angular-tuberculate or subspheroid to subrectangular, 6–8 × 4–6 μ; cystidia thick-walled, short and obese, hyaline, ventricose, abundant on the sides and the edges of the lamellae, 40–50 × 15–18 (–20) μ.

TYPE LOCALITY: Lake Pleasant, New York.
HABITAT: In mixed woods.
DISTRIBUTION: New York and Michigan; Washington and Oregon.
ILLUSTRATION: Bull. N. Y. State Mus. 75: *pl. O, f. 20–25*.

28. **Inocybe abundans** Murrill, Mycologia **3**: 104. 1911.

Pileus subconic, then campanulate-convex, obtuse, sometimes umbonate, 1–3.5 cm. broad; surface dry, silky-fibrillose, more or less subrimose, isabelline, rusty-hued on the disk, virgate; context mild, the odor rather strong-fungous; lamellae free or adnexed, pallid to ferruginous; stipe equal, pallid above, subconcolorous below, up to 5 cm. long, 2–3 mm. thick; cortina white, scanty, evanescent; spores angular-tuberculate, with rather indistinct nodules subhexagonal to subspheroid, 5–7 (–8) × 4–5 (–6) μ; cystidia thick-walled, ventricose, with a tapering neck, obtuse at the apex, with a short pedicel, hyaline or yellowish-tinged, abundant on the sides and the edges of the lamellae, 45–50 × 15–18 μ.

TYPE LOCALITY: New York City.
HABITAT: Moist places in woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia **3**: *pl. 40, f. 14*.

29. **Inocybe repanda** (Bull.) Quél. Fl. Myc. Fr. 101. 1888.

Agaricus repandus Bull. Herb. Fr. *pl. 423*. 1788.
Inocybe desquamans Peck, Bull. Torrey Club **33**: 216. 1906.

Pileus slightly fleshy to subconic-campanulate, then expanded and broadly umbonate, 3–5 cm. broad; surface dry, covered with appressed orange-fulvous fibrils on the whitish foundation, the umbo fulvous and glabrous; margin at length subrimose or split, sometimes scaly-cracked; context white, subrufescent; lamellae adnexed or almost free, broad, subventricose, close to crowded, at first white, rufescent, then clay-colored to cinnamon-brown, the edges white-fimbriate; stipe equal above the abrupt or rounded bulb, stuffed, even, striatulate at the apex, slightly silky-fibrillose, the fibrils toward the base fulvous-tinged, white-pruinose at the apex, 3–6 cm. long, 5–6 mm. thick; spores irregularly angular-tuberculate, with inconspicuous nodules, 7–9.5 (–10) × 5–7 μ; cystidia thick-walled, fusiform, subhyaline, moderately abundant on the sides and the edges of the lamellae, 60–75 × 12–18 (–20) μ.

TYPE LOCALITY: Austria.
HABITAT: On the ground in frondose woods.
DISTRIBUTION: New York to Michigan and Missouri; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 423;* Bres. Fungi Trid. *pl. 119;* C. H. Kauffman, Agar. Mich. *pl. 95;* Rolland, Atl. Champ. *pl. 67, f. 149*.

30. **Inocybe subexilis** (Peck) Sacc. Syll. Fung. **5**: 785. 1887.

Agaricus (*Inocybe*) *subexilis* Peck, Ann. Rep. N. Y. State Mus. **38**: 87. 1885.

Pileus thin, convex or subcampanulate, then expanded, umbonate, 5–10 mm. broad; surface dry, at first pale-chestnut-colored, then yellowish or subochraceous; margin fibrillose; lamellae rounded behind, narrow, rather close, subventricose, whitish becoming dull-ochra-

ceous; stipe equal, solid, flexuous, minutely pruinose, finely striate under a lens, pinkish then yellowish, 1.5–2.5 cm. long, 1 mm. thick; spores angular-tuberculate, irregularly subglobose, 6–7.5 × 5–6 μ; cystidia abundant, medium thick-walled, hyaline, subventricose below a cylindric neck, subobtuse, 45–60 × 12–15 μ.

TYPE LOCALITY: Caroga, New York.
HABITAT: On damp, mossy ground in woods.
DISTRIBUTION: New England and New York.

31. **Inocybe nigrodisca** Peck, Ann. Rep. N. Y. State Mus. 41: 67. 1888.

Pileus thin, at first convex, then nearly plane or somewhat centrally depressed, umbonate, 8–16 mm. broad; surface dry, minutely fibrillose, blackish-brown; margin grayish when moist, cinereous when dry; lamellae free or slightly adnexed, rounded behind, close, at first grayish then ferruginous-brown, sometimes tinged with yellow; stipe slender, firm, solid, flexuous, minutely villose-pruinose, reddish-brown, 2–3.5 cm. long, 1 mm. thick; spores angular-tuberculate, with indistinct nodules, irregularly subglobose; 6–8 μ in diameter; cystidia thick-walled, hyaline, subsessile, slender, narrowly lanceolate-subcylindric, abundant on the sides and the edges of the lamellae, 50–60 × 8–12 μ.

TYPE LOCALITY: Kasoag, Oswego County, New York.
HABITAT: Under ferns in low ground.
DISTRIBUTION: Known only from the type locality.

32. **Inocybe alabamensis** C. H. Kauffman, sp. nov.

Pileus thin, subconic, campanulate-expanded, slightly umbonate, 1–2 cm. broad; surface dry, innately silky, even, light-silvery-gray; lamellae adnexed-sinuate, rather broad, close, whitish tinged yellowish, then rusty-brown; stipe equal, slender, white-pruinose throughout, yellowish, slightly enlarged at the base by adhering sand, 1–2 cm. long, 1.5–3 mm. thick; spores usually angular-tuberculate, subfusiform, or subrectangular, sparsely nodulose, 8–10 (–12) × 3.5–5 μ; cystidia thick-walled, short, ventricose above a short pedicel, hyaline, abundant on the sides and the edges of the lamellae, 45–55 × 15–18 μ.

Type collected on sandy soil, Auburn, Alabama, November 12, 1899, *F. S. Earle* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

33. **Inocybe infida** (Peck) Earle, Torreya **3**: 170. 1903.

Agaricus (*Hebeloma*) *infidus* Peck, Ann. Rep. N. Y. State Mus. **27**: 95. 1875.
Hebeloma infidum Sacc. Syll. Fung. **5**: 796. 1887.

Pileus thin, firm, subconic-campanulate, then expanded, subumbonate, 1.5–2.5 cm. broad; surface dry, silky or slightly squarrulose, whitish, or often reddish-brown on the disk, drying brown; margin at length often split; lamellae adnexed, close, narrow, pallid, becoming pale-cinnamon-brown; stipe equal above the slightly enlarged or somewhat rounded-bulbous base, stuffed to hollow, furfuraceous at the apex, white, drying brownish, 4–5 cm. long, 2–4 mm. thick; spores usually angular-tuberculate, subspheroid, or subrectangular, with rather distinct nodules, 7–9 (–10) × 6–8 μ; cystidia thick-walled, very abundant, short, hyaline, on a short pedicel, 45–50 × 12–18 (–20) μ.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: On mossy ground in woods.
DISTRIBUTION: New England to Maryland, and westward to Michigan.

34. **Inocybe umbratica** Quél. Assoc. Fr. Av. Sci. Compte Rendu **12**: 500. 1884.

Inocybe commixta Bres. Fungi Trid. **1**: 53. 1884.

Pileus fleshy, conic-campanulate, then expanded-umbonate, 1–3.5 cm. broad; surface dry, innately silky-fibrillose, pure-white to whitish-cinereous, dingy-white when dried; margin often split; context white, the odor earthy-nauseous, the taste mild; lamellae free, very crowded, strict, white then grayish-cinnamon, the edges minutely fimbriate; stipe equal above the abrupt turbinate-bulbous or emarginate-bulbous base, solid, delicately pruinose, furfuraceous at the

apex, white, dingy-white when dried, 3–4 cm. long, 3–6 mm. thick; spores angular-tuberculate, subspheroid to subrectangular in outline, with rather distinct nodules, 6–9 (–10) × 4–6 (–7) μ; cystidia abundant, thick-walled, fusoid-ventricose, 40–65 × 12–16 (–18) μ.

TYPE LOCALITY: France.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: Massachusetts, Tennessee, and Oregon; also in Europe.
ILLUSTRATIONS: Assoc. Fr. Av. Sci. Compte Rendu 12: *pl. 6, f. 7*. Bres. Fungi Trid. *pl. 58, f. 2*.

35. **Inocybe paludinella** (Peck) Sacc. Syll. Fung. **5**: 788. 1887.

Agaricus (*Inocybe*) *paludinellus* Peck, Ann. Rep. N. Y. State Mus. **31**: 34. 1879.

Pileus thin, slightly convex, soon plane, umbonate, 0.5–2 cm. broad; surface dry, subfibrillose, whitish or pallid; lamellae adnate, narrow, close, whitish becoming subferruginous; stipe slender, equal, concolorous, white-mycelioid at the base, 2–5 cm. long, 2 mm. thick; spores angular-tuberculate, with minute and indistinct nodules, usually irregularly subrectangular to subglobose, 7–9 × 4–5.5 μ; cystidia thick-walled, subhyaline, subventricose-sublanceolate, somewhat obtuse at the apex, with a short pedicel, very numerous on the sides and the edges of the lamellae, 50–60 × 10–15 μ.

TYPE LOCALITY: Sandlake, New York.
HABITAT: On low ground and in wet places under bushes.
DISTRIBUTION: New York.

36. **Inocybe paludosella** Atk. Am. Jour. Bot. **5**: 215. 1918.

Pileus thin, subconic, campanulate to expanded, prominently umbonate, the umbo subacute, 1–3.5 cm. broad; surface dry, innately fibrillose, subvirgate, clay-colored (R); margin at length slightly rimose; lamellae adnexed, moderately broad, subventricose, white then ochraceous-tawny; stipe slender, equal, hollow, glabrous, pruinose at the apex, with a minute round bulb at the base, white, 4–5 cm. long, 1.5–2.5 mm. thick; spores usually angular-subnodulose, elongate-subhexagonal, or subrhomboid, with nodules scattered and indistinct, 8–10 (–12) × 5–6 (–7) μ; cystidia thin-walled, subcylindric, slightly ventricose, rounded at the apex, subsessile, hyaline, scattered on the sides, more numerous on the edges of the lamellae, 50–70 × 15–20 μ.

TYPE LOCALITY: Seventh Lake, Adirondack Mountains, New York.
HABITAT: On leafmold in mixed woods.
DISTRIBUTION: Known only from the type locality.

37. **Inocybe ventricosa** Atk. Am. Jour. Bot. **5**: 217. 1918.

Pileus convex-expanded, somewhat gibbous, not umbonate, 1–2.5 cm. broad; surface dry, innately silky, bright-clay-colored to ochraceous; margin at length split; lamellae adnexed, elliptic, pale-clay-colored; stipe equal or slightly tapering upward, fibrous-striate, concolorous, covered with minute white villosity, pruinose at the apex, with a few fibrils toward the base, 3–4 cm. long, 2.3 mm. thick; spores usually angular-tuberculate, small, subrectangular, subspheroid, very irregular from dense but indistinct nodules, 6–8 (–9) × 4–6 μ; cystidia thin-walled, or wall slightly thickened, clavate-ventricose, obtuse-rounded above,tapering to a short pedicel, hyaline, those on the edges more thick-walled and shorter, scattered on the sides, more numerous on the edges of the lamellae, 40–55 × 12–18 (–20) μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On low ground in mixed woods.
DISTRIBUTION: Known only from the type locality.

38. **Inocybe leptophylla** Atk. Am. Jour. Bot. **5**: 212. 1918.

Pileus rather thin, convex or obtusely campanulate, then expanded; surface dry, densely covered with numerous, minute, squarrose scales, walnut-brown to burnt-umber, darker on the disk, 1–4 cm. broad; margin with appressed fibrils; context pallid; lamellae adnexed, rather broad, ventricose, pallid, then cinnamon or tawny-olive, the edges white-flocculose; stipe equal, solid, floccose-fibrillose to tomentose-scaly, concolorous to fuliginous below, paler above, 2–4 cm. long, 2–5 mm. thick; spores subellipsoid to subglobose, often twice as long as wide, varying in shape, with scattered to closely-arranged obtuse nodules, which are wider at the

base, 7–11 × 5–7 (–8) μ; cystidia none; sterile cells clavate, numerous on the edges of the lamellae, 30–40 × 10–12 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On debris, wood-mould, and rotten wood, often among moss.
DISTRIBUTION: Canada and New England to Michigan.

39. **Inocybe acystidiosa** C. H. Kauffman, sp. nov.

Pileus subfleshy, obtusely subconic-convex, then plane and subumbonate, 3–6 cm. broad; margin decurved; surface dry, fibrillose-scaly, sordid-brown, the scales darker; context white; lamellae sinuate-adnexed, close, rather broad in front, whitish then pale-brown, the edges white-fimbriate; stipe equal above a subbulbous base, subglabrous, fibrous-fleshy, brown, paler at the apex, white-mycelioid at the base, 2–3 cm. long, 4–8 mm. thick; spores usually angular-tuberculate, elongate-subrectangular, subtriangular, with distinct nodules, 8–10 (–11) × 4–6 μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

Type collected on the ground under pines, Campus, Leland Stanford Jr. University, Palo Alto, California, April 3, 1903, *C. F. Baker 1872* (herb. N. Y. Bot. Gard.).

40. **Inocybe olpidiocystis** Atk. Am. Jour. Bot. **5**: 214. 1918.

Pileus fleshy, convex, obtuse, at length depressed, 4–6 cm. broad; surface viscid when moist, glabrous, pale-clay-colored, darker on the disk; margin repand or split, context white; lamellae broadly emarginate, ventricose, 8–10 mm. wide, grayish then subferruginous; stipe equal, fibrillose-striate, white, sometimes darker below, 4–6.5 cm. long, 10–12.5 mm. thick; spores subellipsoid, subacute at one end, inequilateral, 9–12 (–13) × 5–6 (–8) μ; cystidia varying thick-walled to thin-walled, sessile, broadly subcylindric to subventricose-ovoid, obtuse to rounded at the apex, hyaline, scattered on the sides, more on the edges of the lamellae, 40–60 × 15–30 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On grassy ground and lawns.
DISTRIBUTION: Known only from the type locality.

41. **Inocybe Hystrix** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 453. 1879.

Agaricus Hystrix Fries, Epicr. Myc. 171. 1838.

Pileus ovoid to convex, subexpanded, obtuse or subumbonate, 2–5 (–8) cm. broad; surface dry, clothed with dense, pointed or squarrose scales, varying wood-brown, seal-brown, and umber; margin sometimes appressed-fibrillose; context white; lamellae adnate, not broad, close, pallid at first, then brown, the edges white-flocculose; stipe equal, scarcely enlarged at the base, peronate to near the apex by concolorous, squarrose scales, sometimes merely fibrillose-floccose-scaly, paler or subincarnate beneath the scales, glabrous and pallid at the apex, 4–8 cm. long, 3–6 mm. thick; spores elliptic-ovoid, smooth, inequilateral, 9–13 (–15) × 5–5.5 (–7) μ; cystidia thick-walled, varying sublanceolate-fusoid to ovoid-lanceolate above a slender pedicel, subobtuse at the apex, with a long tapering neck, 60–90 × 12–16 (–20) μ.

TYPE LOCALITY: Sweden.
HABITAT: On the ground in coniferous regions.
DISTRIBUTION: New England and Canada, westward to Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 424 (406)*; Fries, Ic. Hymen. *pl. 106, f. 1.*

42. **Inocybe cincinnata** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 456. 1879.

Agaricus (Inocybe) cincinnatus Fries, Syst. Myc. **1**: 256. 1821.
Agaricus (Inocybe) alienellus Britz. Derm. Südb. 4. 1882.
Inocybe alienella Sacc. Syll. Fungi **5**: 764. 1887.

Pileus slightly fleshy, convex to plane, obtuse or umbonate, 1–3.5 cm. broad; surface dry, floccose-scaly or appressed-fibrillose-scaly, sometimes squarrose on the disk; scales often small, tinged violaceous when young and fresh, changing to mouse-gray, fuscous or dark-brown; margin appressed-fibrillose; context whitish; lamellae adnexed to sinuate-adnate, crowded, ventricose, fuscous-violaceous, then cinnamon-fuscous, the edges fimbriate; stipe rather slender, equal above the slightly bulbous base, solid, more or less fibrillose to fibrillose-sub-

scaly, at first violaceous at the apex, fading, elsewhere subfuscous, at first violaceous within towards the apex, 3–4 cm. long, 2–3 mm. thick; spores elliptic-subovoid, acute at one end, smooth, 8–10 (–12) × 5–5.5 (–6) μ; cystidia thick-walled, often with yellowish content, subcylindric-sublanceolate, somewhat ventricose, on a slender pedicel, abundant on the sides and the edges of the lamellae, 70–95 × 12–15 (–18) μ.

TYPE LOCALITY: Sweden.
HABITAT: Under coniferous trees in groves or woods.
DISTRIBUTION: New York, Ohio, Washington, and Oregon; also in Europe.
ILLUSTRATIONS: Pat. Tab. Fung. *f. 541;* Quél. Champ. Jura Vosg. 1: *pl. 2, f. 4;* Ricken, Blätterp. Deutschl. *pl. 30, f. 5.*

43. **Inocybe violaceoalbipes** Atk. Am. Jour. Bot. **5**: 217. 1918.

Pileus subconic, then convex to expanded, subgibbous or umbonate, 1–2.5 cm. broad; surface dry, prominently appressed- or diffracted-scaly, rimose-cracked around or on the umbo; scales sometimes subsquarrose, clay-colored (R) to raw-sienna (R); lamellae adnexed, sinuate, ventricose, isabelline at length rusty-fulvous, the edges white-fimbriate; stipe equal above the bulb which is surrounded by a thin, discrete volva-like saucer, solid, pruinose at the apex, striatulate, flexuous, subfibrillose, violaceous at the apex, white downward, 3–5 cm. long, 3–5 mm. thick; spores elliptic-ovoid, subinequilateral, smooth, 8–10 × 5–6 μ; cystidia of thin-walled type as to distribution and shape, but with thickened wall on all parts, ventricose-subcylindric to ventricose-fusoid, or clavate on the edges, tapering to a pedicel or subsessile, scattered on the sides, numerous on the edges of the lamellae, 50–65 × 10–16 (–20) μ; basidia 25–27 × 5–7 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: Known only from the type locality.

44. **Inocybe griseoscabrosa** (Peck) Earle, Torreya **3**: 169. 1903.

Agaricus (Hebeloma) griseoscabrosus Peck, Ann. Rep. N. Y. State Mus. **26**: 57. 1874.
Hebeloma griseoscabrosum Sacc. Syll. Fung. **5**: 796. 1887.

Pileus hemispheric or convex, sometimes papillate, dry, 6–12 mm. broad; surface appressed-fibrillose-scaly, cinereous; margin whitish when young; lamellae broad, close, whitish then ochraceous-brown; stipe equal or slightly tapering downward, solid, firm, fibrillose or slightly scaly, whitish or tinged cinereous, 3–5 cm. long, 2–3 mm. thick; spores ellipsoid, smooth, inequilateral, pale under the microscope, 10–12 (–13) × 5–6 (–8) μ; cystidia thin-walled, subcylindric and obtuse to subovoid above a short tapering pedicel, hyaline, scattered to few on the sides, more on the edges of the lamellae, 55–70 × 15–20 μ.

TYPE LOCALITY: Bethlehem, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: New York and Oregon.

45. **Inocybe pyriodora** (Pers.) Bres. Fungi Trid. 1: 48. 1884.

Agaricus pyriodorus Pers. Syn. Fung. 300. 1801.

Pileus fleshy, conic-campanulate, expanded and broadly umbonate, 3–5 (–7) cm. broad; surface dry, at first silky-tomentulose, at length appressed-fibrillose-scaly, whitish when young, soon dingy-ochraceous or pale-fuscous-clay-colored; margin sometimes irregularly lobed or split; context whitish, slowly brick-red where cut, thick on the disk, the odor spicy; lamellae sinuate-adnexed, medium-broad, close, whitish then sordid-cinnamon, with age diluted with a rufous tinge, the edges white-flocculose; stipe subequal, at first cortinate, solid to stuffed, hollowed by grubs, subfibrillose, furfuraceous at the apex, white at first becoming light-reddish with age, 4–7 cm. long, 4–10 mm. thick; spores elliptic-subovoid, smooth, inequilateral, 7.5–10 × 5–6 μ; cystidia thick-walled, moderately abundant, fusoid to ovoid above a short pedicel or sessile, hyaline, flattened in one plane, 45–60 × 10–20 μ.

TYPE LOCALITY: Austria.
HABITAT: In coniferous and frondose woods.
DISTRIBUTION: New England to Michigan, Missouri, and California; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 52;* Gill. Champ. Fr. *pl. 346 (369);* Pat. Tab. Fung. *f. 528.*

46. **Inocybe Bakeri** Peck, Bull. Torrey Club **36**: 332. 1909.

Pileus fleshy, broadly convex, at length subplane, 2.5–5.5 cm. broad; surface densely fibrillose, dry, cream-colored or subalutaceous; context white; lamellae adnexed, crowded, subventricose, pallid-brown then rusty-brown; stipe subequal to subventricose, solid, glabrous, white-pruinose at the apex, at length striate, subradicate, white, 5–8 cm. long, 5–15 mm. thick; spores 11–12 (–14) × 5–6 (–7) μ, ellipsoid, smooth; cystidia 40–50 μ long.

TYPE LOCALITY: Claremont, California.
HABITAT: Under oak trees.
DISTRIBUTION: Known only from the type locality.

47. **Inocybe rubellipes** Atk. Am. Jour. Bot. **5**: 215. 1918.

Pileus thin, campanulate, then obtusely umbonate, 1–1.5 cm. broad; surface dry, with minute, darker, appressed-fibrillose scales, sometimes areolate-rimose on the center, raw-sienna or wax-yellow; margin slightly rimose; context whitish, the odor strong, like meal or cornsilk; lamellae adnexed, narrow, crowded, grayish-avellaneous, changing to dull-reddish when bruised, the edges flocculose; stipe equal, solid, pruinose, at the apex straight or flexuous, concolorous but paler than pileus, white-mycelioid at the base, white within, turning reddish when bruised, 3–5.5 cm. long, 2–4 mm. thick; spores elongate-ovoid, narrower toward one end, inequilateral, 8–10 (–12) × 5–6 (–7) μ; cystidia thin-walled, sometimes slightly thickened above, cylindric to subventricose-subcylindric above a slender pedicel, hyaline, abundant on the sides and the edges of the lamellae, 55–80 × 10–18 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: Known only from the type locality.

48. **Inocybe hirtella** Bres. Fungi Trid. **1**: 52. 1881.

Pileus thin, conic-campanulate, then expanded-umbonate, 1–2.5 cm. broad; surface dry, yellowish, covered densely with small, hairy, darker-yellow scales, glabrous on the center; margin soon split; context whitish; lamellae adnate, close, rather broad, subventricose, whitish at first then fuscescent, the edges white-fimbriate; stipe equal or attenuate below, bulbillose, pruinose at the apex, subglabrous elsewhere, white, slightly straw-colored with age, white within, 2–4 cm. long, 2–4 mm. thick; spores elongate-elliptic-oblong, subinequilateral, smooth, 8–11 (–12) × 4–5 (–6) μ; cystidia thick-walled, lanceolate-subfusoid above a long pedicel, hyaline, abundant on the sides and the edges of the lamellae, 50–75 × 10–15 μ.

TYPE LOCALITY: Austria.
HABITAT: On moist ground under shrubs.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATION: Bres. Fungi Trid. *pl. 58, f. 1.*

49. **Inocybe ochraceomarginata** C. H. Kauffman, sp. nov.

Pileus thin, campanulate, then convex-expanded, umbonate, 2–3.5 cm. broad; surface dry, appressed-fibrillose-scaly, fibrillose toward the margin, amber-brown (R) when young, at length ochraceous-tawny (R) to ochraceous-buff (R) toward the margin; context white; lamellae adnate, sinuate, moderately broad, subventricose, close to subdistant, whitish then dark-brown, the edges white-fimbriate; stipe equal, subbulbous, usually geniculate below, stuffed, fibrillose, subglabrescent, pruinose at the apex, pale-ochraceous-buff, 4–7 cm. long, 2–6 mm. thick; spores ellipsoid-ovoid, smooth, 8–9.5 (–10) × 5–5.5 (–6) μ; cystidia thick-walled, subcylindric-sublanceolate above a long slender pedicel, often with yellowish content, moderately abundant on the sides and the edges of the lamellae, 60–90 × 12–15 (–18) μ.

Type collected at the roadside under bushes, Stow, Massachusetts, June 27–July 19, 1918, *Simon Davis* (herb. Univ. of Mich.).
DISTRIBUTION: Massachusetts.

50. **Inocybe cylindrocystis** Atk. Am. Jour. Bot. **5**: 211. 1918.

Pileus convex to expanded-subumbonate, fragile, 1–3 cm. broad; surface dry, covered with numerous small fibrillose scales, glabrous on the disk, ochraceous; margin at length splitting and repand; lamellae adnexed, elliptic, ventricose, close to subdistant, medium-broad, whitish

to pallid-ochraceous, then olivaceous-brown; stipe equal, innately fibrous-striate, sometimes twisted, minutely pruinose at the apex, elsewhere with scattered fibrils, white then tinged straw-colored, 4–6.5 cm. long, 2–5 mm. thick; spores elliptic-ovoid, smooth, inequilateral, 9–10 × 4–5 μ; cystidia short, thin-walled or wall slightly thickened, moderately abundant, cylindric or slightly tapering downward, projecting a little above the hymenium, 30–40 × 8–11 μ; basidia 25–27 × 7–8 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in low woods.
DISTRIBUTION: New York and Michigan.

51. **Inocybe squamosa** Bres. Atti Accad. Rovereto III. 8: 129. 1902.

Pileus rather thin, convex, then expanded, obtuse to umbonate, 1–1.5 cm. broad; surface dry, covered with small, fibrillose-hairy scales, ochraceous or tawny-ochraceous, subglabrous at the disk, often areolate; lamellae sinuate-adnexed, subdistant, broad, pale-fulvous, the edges fimbriate; stipe subequal, stuffed to hollow, fibrillose, pallid or pale-yellowish, 1–3 cm. long, 2–4 mm. thick; spores ellipsoid-ovoid, inequilateral, smooth, 8–10 (–11) × 5–6 (–7) μ; cystidia thin-walled, subcylindric or slightly ventricose, tapering to a short pedicel, rounded at the apex, scattered on the sides, more numerous and with the wall slightly thickened on the edges of the lamellae, 60–90 × 8–15 μ.

TYPE LOCALITY: Portugal.
HABITAT: On the ground.
DISTRIBUTION: New York and Michigan; also in Europe.

52. **Inocybe lacera** (Fries) P. Karst. Bidr. Finl. Nat. Folk 32: 457. 1879.

Agaricus (Inocybe) lacerus, Fries, Syst. Myc. 1. 257. 1821.
Agaricus (Inocybe) infelix Peck, Ann. Rep. N. Y. State Mus. 32: 29. 1879.
Inocybe infelix Peck, Bull. N. Y. State Mus. 1²: 13. 1888.
Inocybe Raveneli Massee, Ann. Bot. 18: 485. 1904.
Inocybe euthelella Peck, Bull. N. Y. State Mus. 176: 19. 1915.

Pileus subconvex, or subcampanulate at first, then convex-expanded, umbonate to obsoletely subumbonate, dry, 1–3 (–4) cm. broad, usually not large; surface dry, at first lanuginose or fibrillose-floccose varying to appressed-fibrillose, at length fibrillose-scaly, lacerate-scaly or subsquarrose-scaly, sometimes subdenuded, umber or snuff-brown when young and fresh, varying through Natal-brown (R), Dresden-brown (R) and tawny-ochraceous (R) with age, or umber-lutescent, sometimes subrimose; margin usually subfibrillose, the cortina fugacious; context whitish; lamellae adnexed, broad, ventricose, close, whitish then fuscous-brownish to grayish-cinnamon or darker (not rufescent in American form); stipe firm, toughish, softer at the apex, equal, solid or persistently stuffed, scarcely enlarged at the base, naked at the apex, floccosely-fibrillose to glabrescent, concolorous downward, paler or whitish above, whitish within (not rufescent in American form), 3–4 cm. long, 3–5 mm. thick; spores elongate-subcylindric or slightly narrowed toward one end, frequently subtruncate at one end, smooth, 10–13 (–20) × 4–5.5 (–6) μ; cystidia thin-walled, broadly subcylindric to subventricose or ventricose-subovoid, rounded or obtuse at the apex, on a slender pedicel, scattered on the sides, ventricose-obtuse, hyaline, numerous, and somewhat smaller on the edges of the lamellae, 50–70 × 15–20 μ.

TYPE LOCALITY: Europe.
HABITAT: Along roadsides, on lawns, in coniferous and frondose woods, and in sphagnum swamps.
DISTRIBUTION: New England and Canada to Virginia, Alabama, and Michigan; Washington and Oregon; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 583 (415)*; Pat. Tab. Fung. *f. 531*; Ricken, Blätterp. Deutschl. *pl. 30, f. 4.*

53. **Inocybe leptocystis** Atk. Am. Jour. Bot. 5: 212. 1918.

Pileus slightly fleshy, campanulate, then convex, at length expanded-umbonate, 1–3 (–4) cm. broad; surface dry, innately silky-fibrillose, at length minutely lacerate or subscaly, sometimes remaining smooth, Mars-brown (R), tawny with age; context whitish; lamellae adnexed, narrow, crowded, subventricose, grayish, then avellaneous-clay-colored (R), the edges white-fimbriate; stipe equal or somewhat thickened at the base, solid, slightly silky-

fibrillose, pallid or tinged dingy-incarnate, white-mycelioid at the base, 3–6 cm. long, 2–6 mm. thick; spores subelliptic, smooth, inequilateral, 7–9 × 4–5 μ; cystidia thin-walled, cylindric or cylindric-capitate to subventricose, on a slender pedicel, hyaline, 50–65 × 12–16 μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: New York and Michigan.

54. **Inocybe flocculosa** (Berk.) Sacc. Syll. Fung. **5**: 768. 1887.

Agaricus (*Inocybe*) *flocculosus* Berk. in Smith, Engl. Fl. **5**²: 97. 1836.

Pileus thin, subconic to subcampanulate, expanded-umbonate, 5–15 mm. broad; surface dry, appressed-fibrillose-scaly, tawny-brown with tinge of fuscous; lamellae rounded-adnate, broad, ventricose, close to subdistant, brownish-cinereous, then concolorous, the edges white-fimbriate; stipe equal, hollow, pruinose-hoary, scurfy at the apex, tinged brown, 1–2 cm. long, 1–2 mm. thick; spores elliptic-ovoid, smooth, 7–9 × 4–5.5 (–6) μ; cystidia moderately thick-walled, moderately abundant, subventricose-sublanceolate above a short pedicel, hyaline, 45–65 × 10–15 μ.

TYPE LOCALITY: England.
HABITAT: On low, moist ground in woods or swamps.
DISTRIBUTION: Massachusetts to Michigan; Colorado; also in Europe.
ILLUSTRATION: Cooke, Brit. Fungi *pl. 393 (416)*.

55. **Inocybe minima** Peck, Mycologia 5: 69. 1913.

Pileus thin, fragile, subconic, then convex to nearly plane, sometimes umbonate, 5–15 mm. broad; surface dry, minutely tomentose-fibrillose, tawny-brown; margin involute and sometimes split; lamellae adnate, subdistant, pale-tawny-brown or darker, the edges white-fimbriate; stipe slender, equal, solid, pallid, 1–2 cm. long, 1–1.5 mm. thick; spores subellipsoid, smooth, inequilateral, 7–9 × 4–5 μ; cystidia moderately thick-walled, abundant, subventricose-fusoid or sublanceolate above a short pedicel, hyaline, 60–75 × 12–18 μ.

TYPE LOCALITY: South Acton, Massachusetts.
HABITAT: In gravelly soil.
DISTRIBUTION: New England to North Carolina.

56. **Inocybe atripes** Atk. Am. Jour. Bot. **5**: 210. 1918.

Pileus slightly fleshy, ovoid, then convex-expanded, subumbonate, 1–3.5 cm. broad; surface dry, appressed-fibrillose-scaly rarely subsquarrose, areolate-cracked on the center, tawny-olive to raw-umber, darker on the disk; context white, the odor rather distinct when bruised; lamellae adnexed, thin, subventricose, moderately broad, white at first, finally tawny-olive, the edges white-fimbriate; stipe equal or slightly enlarged at the base, flexuous, solid, pruinose at the apex, subfibrillose or slightly lacerated downward, smoky-fuscescent, finally fuliginous except the whitish apex, white-mycelioid at the base, 3–6 (–7) cm. long, 3–6 mm. thick; spores ovoid or subellipsoid, smooth, inequilateral, 7–9.5 (–10) × 5–5.5 (–6) μ; cystidia subcylindric-clavate, thick-walled, hyaline, tapering to a short pedicel, rather abundant, 45–55 × 12–15 (–20) μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: Under pines and shrubs.
DISTRIBUTION: New York, Maryland, and Wyoming.

57. **Inocybe retipes** Atk. Am. Jour. Bot. **5**: 215. 1918.

Pileus rather thin, campanulate, subexpanded, umbonate, 1–3.5 cm. broad; surface dry, appressed-fibrillose-scaly, silky-fibrillose toward the margin, cracked on the umbo, Brussels-brown (R); context white; lamellae adnate, subdistant, moderately broad, avellaneous, then wood-brown (R), the edges white-fimbriate; stipe equal, solid, fibrillose-reticulate, the reticulum Brussels-brown (R), interspaces paler, white within, 5–7 cm. long, 3 mm. thick; spores narrowly elliptic-ovoid, inequilateral, smooth, 9–11 (–12) × 5–6 μ; cystidia moderately thick-walled, slender, subcylindric-subfusiform, obtuse at the apex, on a short pedicel, abundant on the sides and the edges of the lamellae, 60–75 × 10–15 (–18) μ.

TYPE LOCALITY: Seventh Lake, Adirondack Mountains, New York.
HABITAT: On swampy ground in mixed woods.
DISTRIBUTION: Known only from the type locality.

58. **Inocybe longipes** C. H. Kauffman, sp. nov.

Pileus subconic, then campanulate-expanded, umbonate, 3–6 cm. broad; surface dry, fibrillose-scaly on the center, becoming long-rimose toward the margin, cream-colored to isabelline; margin decurved; lamellae adnexed, narrow, broader in front, close, whitish-avellaneous, then cinnamon-brown, the edges white-fimbriate; stipe subequal or tapering upward, clavate-subventricose enlarged toward the base, stuffed to hollow, glabrescent, striatulate, the same color as the pileus or paler, 4–8 cm. long, 4–10 mm. thick; spores elliptic-amygdaliform, smooth, inequilateral, pale-ochraceous under the microscope, 8–10 × 5–6 μ; cystidia thick-walled, moderately abundant, hyaline, rather stout, ventricose above a short thick pedicel, obtuse at the apex, 45–50 × 12–16 μ.

Type collected on the ground in coniferous woods, Welches, Oregon, October 6, 1922, *C. H. Kauffman* (herb. Univ. of Mich.).

DISTRIBUTION: Washington and Oregon.

59. **Inocybe excoriata** Peck, Bull. N. Y. State Mus. 75: 16. 1904.

Pileus rather fleshy, broadly conic, soon broadly convex, umbonate, 3–5 cm. broad; surface dry, innately fibrillose, at length somewhat lacerate or excoriate, walnut-brown (R) to army-brown (R); margin cortinate-silky, the cortina whitish, evanescent; context white; lamellae adnexed, then emarginate and decurrent by a tooth, narrow, close, white becoming browinsh-gray or avellaneous, the edges white-fimbriate; stipe equal, solid, innately silky-fibrillose, white or whitish, same color within, 3–5 cm. long, 4–6 mm. thick; spores elliptic, smooth, inequilateral, 7–9 (–10) × 4.5–5.5 μ; cystidia thick-walled, ventricose-subfusoid, obtuse at the apex, with a short pedicel, hyaline, abundant on the sides and the edges of the lamellae, 50–65 × 12–18 μ.

TYPE LOCALITY: Lake Pleasant, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: Massachusetts and New York.
ILLUSTRATION: Bull. N. Y. State Mus. 75: *pl. O, f. 14–19*.

60. **Inocybe subdestricta** C. H. Kauffman, sp. nov.

Inocybe destricta minor C. H. Kauffman, Agar. Mich. 456. 1918.

Pileus rather thin, subconic, conic-campanulate, then expanded-umbonate, at length depressed around the darker, abrupt umbo, 2–4 cm. broad; surface dark-brown to rufous-brown, the umbo dark-chestnut or umber, dry, innately fibrillose at first, at length lacerate-scaly or rimose or both; context whitish, the odor slightly nauseous; lamellae sinuate-adnexed, or deeply emarginate, with a slight decurrent tooth, ventricose, medium-broad, close, whitish, then pale-brownish-ashy, the edges white-fimbriate; stipe equal, scarcely subbulbous, varying flocculose-fibrillose to glabrescent, solid, pruinose at the apex, pallid, tinged rufous, white within, 2.5–5 cm. long, 2.5–5 mm. thick; spores almond-shaped, subellipsoid, subinequilateral, smooth, 8–10 × 5–5.5 μ; cystidia rather thick-walled, varying thin-walled, subcylindric to ventricose, subovoid to subflaskshaped, obtuse at the apex, tapering to a short pedicel, abundant on the sides and the edges of the lamellae, 50–65 × 15–18 (–20) μ.

TYPE LOCALITY: New Richmond, Michigan.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: New York to Tennessee and Michigan; Idaho.

61. **Inocybe ovalispora** C. H. Kauffman, sp. nov.

Pileus slightly fleshy, firm, convex, then expanded-plane, umbonate or subumbonate, 2–5 cm. broad; surface dry, innately silky, often becoming diffracted-scaly toward the margin, radially rimose to the umbo, chestnut-brown; context white; lamellae sinuate-adnexed, not broad, close, whitish, then clay-colored or brown, the edges white-fimbriate; stipe equal, scarcely subbulbous, glabrous, solid, white-pruinose at the apex, tinged rufous, slightly rufous or brownish within, 4–5 cm. long, 3–4 mm. thick; spores ovoid to subglobose, sometimes obscurely subangled, smooth, not truly angular, 6–7 (–7.5) × 5–6 μ; cystidia slightly thick-walled, hyaline, subcylindric or slightly ventricose above a short pedicel, numerous on the sides and the edges of the lamellae, 55–70 × 12–15 μ.

Type collected on the ground in frondose woods, Ann Arbor, Michigan, September 4, 1912, *C. H. Kauffman* (herb. Univ. of Mich.).

DISTRIBUTION: Michigan and New York.

62. **Inocybe rimosa** (Bull.) Pat. Hymén. Eur. 118. 1887.

Agaricus rimosus Bull. Herb. Fr. *pl. 388*. 1788.

Pileus slightly fleshy, subconic, then campanulate, convex-expanded, umbonate, 1–3(–4) cm. broad; surface dry, distinctly or long-rimose, innately fibrillose, even or diffracted on the disk, Mars-brown (R) to ochraceous-tawny (R) sometimes rufescent; context compact, white; lamellae attenuate-adnexed or almost free, scarcely ventricose, at first brownish-clay-colored, distinctly darker, ferruginascent, the edges white-fimbriate; stipe solid, firm, terete, subbulbous at the base, innately fibrillose, mealy at the apex, white, scarcely or slightly ochraceous-tinged with age, 4–6 cm. long, 3–6 mm. thick; spores pip-shaped, attenuated toward one end, inequilateral, elliptic-subovoid, subobtuse at the narrow end, smooth, 9–11 (–13) × 4.5–6 μ; cystidia thick-walled, ventricose-sublanceolate above a short pedicel, sometimes stouter, obtuse at the apex, hyaline, moderately abundant on the sides, numerous on the edges of the lamellae, 50–65 × 12–18 (–22) μ.

TYPE LOCALITY: Europe.
HABITAT: In woods.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATIONS: Pat. Tab. Fung. *f. 114*.

63. **Inocybe pallidipes** Ellis & Ev. Jour. Myc. **5**: 24. 1889.

Pileus thin, subconic, then campanulate or expanded-plane, umbonate, 1–3.5 cm. broad; surface dry, innately fibrillose becoming minutely lacerate-scaly, sometimes the cuticle is cracked on the disk, subrimose on the margin, the rimosity usually short, clay-colored (R) or pale-brown drying darker; context whitish; lamellae adnexed or at length sinuate by a tooth, rather narrow to medium-broad, subventricose, close, pale-grayish-white, then tawny-olive (R), the edges white-fimbriate; stipe equal, subbulbous, solid, pruinose at the apex, with scattered close fibrils downward, white-mycelioid at the base, 2–5 cm. long, 2–4 mm. thick; spores narrow-elliptic, smooth, inequilateral, sometimes narrower toward one end, 7–9 (–10) × 4.5–5.5 μ; cystidia short, moderately thick-walled, ventricose-subcylindric or tapering upward from enlargement, with a short pedicel, medium-abundant, 45–55 × 12–15 μ.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: In frondose woods.
DISTRIBUTION: New England to North Carolina, and westward to Tennessee and Michigan; Wyoming, Washington, and Oregon.

64. **Inocybe eutheloides** (Peck), Bull. N. Y. State Mus. 1[2]: 13. 1888.

Agaricus (*Inocybe*) *eutheloides* Peck, Ann. Rep. N. Y. State Mus. **32**: 29. 1879.

Pileus thin, subconic, then campanulate, expanded-umbonate, 1–2.5 cm. broad; surface dry, silky-fibrillose, at length distinctly rimose, sometimes lacerate and subscaly, fawn-colored to grayish-fawn; context white; lamellae adnexed, rather broad, ventricose, close, whitish, then brownish-cinnamon, the edges white-fimbriate; stipe equal, subbulbillate at the base, solid, densely white-fibrillose when young, subglabrescent, scurfy-pruinate at the apex, 2–5 cm. long, 2–4 mm. thick; spores elliptic-ovoid, subacute at the end, smooth 7 (–10) × 4.5–5.5 μ; cystidia thick-walled, narrowly flaskshaped above a short pedicel, hyaline, very abundant on the sides and the edges of the lamellae, 50–60 × 12–15 μ.

TYPE LOCALITY: Brewerton, New York.
HABITAT: On the ground in frondose or mixed woods.
DISTRIBUTION: New England to North Carolina, and westward to Michigan; Washington.

65. **Inocybe violaceifolia** Peck, Ann. Rep. N. Y. State Mus. **41**: 66. 1888.

Pileus thin, subconic, then convex to nearly plane, obsoletely umbonate, 1–2.5 cm. broad; surface dry, flocculose-fibrillose, at length subscaly, grayish; lamellae adnexed, close, at first pale-violaceous, then brownish-cinnamon; stipe slender, equal, solid, fibrillose, white or whitish, 2–3 cm. long, 2 mm. thick; spores ellipsoid, smooth, inequilateral, 7–9 × 4.5–5.5 μ; cystidia of thin-walled type, subcylindric to subventricose, rounded at the apex, on a short pedicel,

scattered on the sides, abundant and often capitate on the edges of the lamellae, 45–55 × 12–15 μ.

TYPE LOCALITY: Selkirk, New York.
HABITAT: On mossy ground in woods.
DISTRIBUTION: Known only from the type locality.

66. **Inocybe lilacina** (Boud.) C. H. Kauffman, Agar. Mich. 466. 1918.

Agaricus geophylluslilacinus Peck, Ann. Rep. N. Y. State Mus. 26: 90, in part. 1874.
Agaricus (*Inocybe*) *violaceus* Pat. Tab. Fung. 2: 20. 1887. Not *A. violaceus* L. 1753.
Inocybe geophylla lilacina Boud. Ic. Myc. 1: 13. 1905.

Pileus thin, campanulate-convex, umbonate, 1–3 cm. broad; surface dry, innately silky, glossy, light-vinaceous-purple (R) to vinaceous-lilac (R), subpersisting when dried; context white; lamellae adnate, rounded behind, medium-broad, subventricose, whitish at first, then grayish-clay-colored or darker; stipe equal, subbulbous, persistently stuffed, silky, the same color as the pileus but paler, 2–4 cm. long, 2–4 mm. thick; spores ellipsoid, smooth, inequilateral, 7–9 × 4.5–5.5 μ; cystidia thick-walled, short, ventricose-subfusiform, on a short pedicel, abundant on the sides and the edges of the lamellae, 45–55 × 12–15 μ.

TYPE LOCALITY: France.
HABITAT: In frondose and coniferous woods.
DISTRIBUTION: New England to North Carolina and Minnesota; Washington, Oregon, Idaho, and California; also in Europe.
ILLUSTRATIONS: Boud. Ic. Myc. *pl. 125;* Pat. Tab. Fung. *f. 545;* Ricken, Blätterp. Deutschl. *pl. 30, f. 2.*

67. **Inocybe Godeyi** Gill. Champ. Fr. 517. 1876.

Inocybe rubescens Gill. Rev. Myc. 5: 31. 1883.
Agaricus (*Inocybe*) *Trinii* Pat. Tab. Fung. 1: 157. 1885. Not *A. Trinii* Weinm. 1836.
Agaricus (*Inocybe*) *Trinii rubescens* Pat. Tab. Fung. 1: 156. 1885.
Inocybe Trinii Bres. Fungi Trid. 2: 14. 1892. Not *I. Trinii* Sacc. 1887.
Inocybe repanda Quél. Fl. Myc. Fr. 101, in part. 1888.

Pileus slightly fleshy, subconic, then campanulate-convex, expanded, umbonate, 1–3 cm. broad (in American form); surface dry, innately silky, becoming radially virgate, sometimes subscaly around the umbo, whitish at first, sometimes ochraceous-tinted, becoming suffused with a rufous tinge, at length cinnamon-rufous (R); margin rarely at length rimulose; context white at first, slowly assuming a rufous tint when cut; lamellae sinuate-adnexed, rather narrow, subventricose, close, whitish then cinnamon-brown, with rufous tinge, the edges white-fimbriate; stipe equal, solid, with a slight emarginate bulb, or slightly enlarged at the base, innately silky, sometimes longitudinally rimulose, white-pruinose at the apex, at length rufous-tinged like the pileus, 3–6 cm. long, 1.5–3.5 mm. thick; spores variable in different collections, ellipsoid-ovoid and pointed at one end, or ellipsoid-ovoid, inequilateral, 10–12 × 5–6 μ or 8–10 × 5–6 μ, or intermediate, smooth; cystidia thick-walled, hyaline, ovoid-sublanceolate above a slender pedicel, to broadly ventricose-fusiform, moderately abundant on the sides, more on the edges of the lamellae, 50–65 × 12–24 μ.

TYPE LOCALITY: France.
HABITAT: In moist coniferous woods, and in cedar swamps.
DISTRIBUTION: Maine, New York, and Michigan; also in Europe.
ILLUSTRATIONS: Boud. Ic. Myc. *pl. 122;* Bres. Fungi Trid. *pl. 120;* Pat. Tab. Fung. *f. 341, 345;* Ricken, Blätterp. Deutschl. *pl. 30, f. 3.*

68. **Inocybe serotina** Peck, Bull. N. Y. State Mus. 75: 17. 1904.

Inocybe bulbosa Peck, Bull. Torrey Club 36: 333. 1909.
Inocybe ammophila Atk. Am. Jour. Bot. 5: 210. 1918.

Pileus fleshy, firm, campanulate to convex-expanded, obtuse or broadly umbonate 3–7 (–10) cm. broad; surface dry, sometimes rimose-diffracted with age, whitish tinged brownish on the center, or yellowish toward the margin; margin fibrillose; context white; lamellae adnexed or nearly free, close, rounded behind, ventricose, whitish then brownish-cinnamon, the edges white-fimbriate; stipe equal, long or short, solid, fibrous, white, narrowed toward the base, or the base bulbous from a mass of sand adhering to its mycelium, 2–7 (–15) cm. long, 6–15 mm. wide; spores large and variable in size, smooth, elliptic-ovoid, subelongate, inequi-

lateral, pale-ochraceous under the microscope, 10–16 (–18) × 6–8 μ; cystidia subcylindric to clavate-subventricose, rounded, broad at the apex, very thick-walled, the thickening often extending around the entire cystidium, subsessile or tapering to a short pedicel, hyaline, present or almost lacking on the sides, abundant and shorter to broadly elliptic on the edges of the lamellae, 30–70 × 15–30 μ.

TYPE LOCALITY: Sodus Bay, Wayne County, New York.
HABITAT: On sandy shores.
DISTRIBUTION: New York, Michigan, California, and Wyoming.

69. **Inocybe comatella** (Peck) Sacc. Syll. Fung. **5**: 791. 1877.

Agaricus (*Inocybe*) *comatellus* Peck, Ann. Rep. N. Y. State Mus. **38**: 87. 1885.

Pileus submembranous, convex or expanded, sometimes papillate, 4–8 mm. broad; surface dry, clothed with dense whitish or grayish hairs; margin substrigose; lamellae adnexed, close to subdistant, pale-grayish then pale-tawny; stipe equal, solid, flexuous, minutely flocculose-pruinose, pallid tinged reddish-brown, white-mycelioid at the base, 1–2.5 cm. long, 0.8–1 mm. thick; spores ellipsoid-ovoid, smooth, 6–8 × 3–4 μ; cystidia moderately thick-walled, ventricose-sublanceolate to subfusoid, abundant on the sides and the edges of the lamellae, 45–55 × 10–15 (–20) μ.

TYPE LOCALITY: Caroga, New York.
HABITAT: On rotten wood.
DISTRIBUTION: New York to North Carolina.
ILLUSTRATION: Ann Rep. N. Y. State Mus. **38**: *pl. 2, f. 5–8*.

70. **Inocybe corydalina** Quél. Champ. Jura Vosg. **3**: 115. 1875.

Pileus slightly fleshy, subconic to campanulate, then expanded-umbonate, the umbo rather broad and obtuse, 3–6 cm. broad; surface dry, innately fibrillose, sometimes subscaly around the umbo, sometimes diffracted on the disk, whitish and streaked with bister-colored fibrils, the umbo at length greenish to olivaceous, more or less glaucous; margin rimose; context white, the odor rather strong; lamellae adnate then sinuate, narrow, rather crowded, pallid then cinnamon-brown (R), the edges white-fimbriate; stipe equal or slightly incrassate toward the base, often curved below, solid, whitish then fuscescent, white within but often changing to greenish at the base when cut, pruinose at the apex, 3–5 cm. long, 2–5 mm. thick; spores ovoid-subcuneate, subinequilateral, smooth, 8–9.5 (–10) × 5–5.5 (–6) μ; cystidia short, wall slightly thickened, moderately abundant to scattered, subpyriform to ventricose-subovoid, tapering to a slender pedicel, hyaline, 45–55 × 15–18 μ; sterile cells saccate-clavate, on the edges of the lamellae.

TYPE LOCALITY: France.
HABITAT: In mixed woods.
DISTRIBUTION: Maryland, New York, and Colorado; also in Europe.

71. **Inocybe sindonia** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 465. 1879.

Agaricus (*Inocybe*) *sindonius* Fries, Epicr. Myc. 176. 1838.

Pileus slightly fleshy, subconic-ovoid then campanulate, expanded and broadly umbonate, 2–6 cm. broad; surface dry, at first floccose-fibrillose with dense white fibrils, subglabrescent with age, whitish becoming straw-yellow to dingy-ochraceous with age; context compact, white; lamellae emarginate-adnexed or almost free, moderately broad, ventricose, close, at first pale-grayish-white then grayish-clay-colored; stipe equal above the subemarginate bulb, stuffed, often striate, at first fibrillose, silky shining, white or whitish, 3–6 cm. long, 4–9 mm. thick; spores ellipsoid, smooth, inequilateral, subacute at the end, 8–10 × 5–6 μ; cystidia thick-walled, hyaline, stout, ventricose, subovoid-lanceolate above a short pedicel, abundant on the sides and the edges of the lamellae, 60–80 × 15–20 μ.

TYPE LOCALITY: Sweden.
HABITAT: In coniferous and frondose woods.
DISTRIBUTION: New England to Virginia, and westward to Michigan, Colorado, Washington, and Oregon; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 400 (438)*; Ricken, Blätterp. Deutschl. *pl. 30, f. 7*.

72. **Inocybe insinuata** C. H. Kauffman, sp. nov.

Pileus slightly fleshy, subovoid, campanulate, finally convex-expanded, obtuse or broadly subumbonate, 3–5 cm. broad; surface dry, innately silky-fibrillose, chalky white; margin even; context white; lamellae sinuate-adnexed, narrow, close, whitish then pale-rusty-clay-colored stipe short, equal above the subemarginate bulb, stuffed to hollow, innately fibrillose-silky, white, 2.5–4 cm. long, 6–8 mm. thick; spores ellipsoid-ovoid, inequilateral, pale-rusty-tinged under the microscope, smooth, 8–9 × 4.5–5.5 μ; cystidia thin-walled, mostly slender, cylindric to subventricose above a slender pedicel, rarely elliptic and broad, hyaline, scattered on the sides, more numerous on the edges of the lamellae, 55–65 × 8–15 μ.

Type collected on the ground under pines, on the campus, University of California, Berkeley, California, January 29, 1915, *W. A. Setchell 1063* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

73. **Inocybe geophylla** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 464. 1879.

Agaricus (*Inocybe*) *geophyllus* Fries, Syst. Myc. **1**: 258. 1821.

Pileus thin, subconic, then expanded-umbonate, 1.5–2.5 cm. broad; surface dry, very silky and glossy, white or whitish; context white; lamellae adnexed, close, rather broad, ventricose, whitish then pale-grayish-clay-colored; stipe slender, equal, firm, stuffed, silky, white, pruinose at the apex, 3–5 cm. long, 2–3 mm. thick; spores subellipsoid, smooth, inequilateral, 8–9 × 4.5–5.5 (–6) μ; cystidia moderately thick-walled, hyaline, subventricose-subfusoid, abundant on the sides and the edges of the lamellae, 45–58 × 12–15 (–18) μ.

TYPE LOCALITY: Europe.

HABITAT: On the ground in frondose and coniferous woods.

DISTRIBUTION: New England to North Carolina and Tennessee, west to the Mississippi River; Idaho; Washington to California; also in Europe.

ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 401* (*440*); Dufour, Atl. Champ. *pl. 40, f. 93;* Gill. Champ. Fr. *pl. 354* (*364*); Pat. Tab. Fung. *f. 228;* Mycologia **6**: *pl. 137, f. 6.*

74. **Inocybe sambucella** Atk. Am. Jour. Bot. **5**: 215. 1918.

Pileus slightly fleshy, subovoid, then convex-expanded, gibbous, obtuse, at length subrepand, 1.5–2.5 cm. broad; surface dry, glabrous, subsilky, whitish; lamellae adnexed, rounded behind, close, écru-drab (R) at maturity, the edges white-fimbriate; stipe equal, stuffed, fibrous-striate, pruinose at the apex, white, 3–5 cm. long, 4–6 mm. thick; spores suboblong to subovoid, smooth, 7–9 (–10) × 4–5 (–6) μ; cystidia thick-walled, short, obese, subfusiform to broadly ventricose-ovoid above a short pedicel, subacute to subacuminate above, hyaline, moderately abundant on the sides and the edges of the lamellae, 40–50 × 12–18 μ.

TYPE LOCALITY: Ithaca, New York.

HABITAT: In mixed woods.

DISTRIBUTION: Known only from the type locality.

75. **Inocybe scabella** Fries, Hymen. Eur. 235. 1874.

Agaricus (*Inocybe*) *scabellus* Fries, Syst. Myc. **1**: 259. 1821.

Pileus thin, conic-campanulate, expanded, 1.5–2.5 cm. broad; surface dry, innately silky, then minutely appressed-fibrillose-scaly, the umbo small, naked, cinnamon-brown to sordid-alutaceous; context pallid; lamellae sinuate-adnexed, subdistant, ventricose, pale-grayish-white then sordid-cinnamon, the edges white-fimbriate; stipe equal, stuffed, subfibrillose, glabrescent, pallid or fuscescent, 2–4 cm. long, 1–2 mm. thick; spores ellipsoid-almond-shaped, smooth, 10–13 × 5–6 μ; cystidia thick-walled, fusoid-ventricose, abundant on the sides and the edges of the lamellae, 60–70 × 13–14 μ.

TYPE LOCALITY: Sweden.

HABITAT: In grassy places or on gravelly banks.

DISTRIBUTION: New England to Michigan; Washington and Oregon; also in Europe.

ILLUSTRATIONS: Bres. Fungi Trid. *pl. 86, f. 1;* Fries, Ic. Hymen. *pl. 110, f. 1;* Pat. Tab. Fung. *229.*

76. **Inocybe rufidula** C. H. Kauffman, sp. nov.

Inocybe scabella rufa C. H. Kauffman, Agar. Mich. 466. 1918.

Pileus thin, subconic, then campanulate-convex, at length expanded, mammillate, 1–2 cm. broad; surface dry, innately silky-fibrillose, sometimes minutely lacerate, virgate, rufous (R) or cinnamon-rufous (R); context pallid; lamellae sinuate-adnexed, moderately broad, subdistant, pale-brownish-grayish then darker, the edges white-fimbriate; stipe equal, slender, solid, toughish, slightly fibrillose, pale-rufous throughout the apex, white-mealy at the apex, tinged rufous within, 5–6 cm. long, 1–2 mm. thick; spores elliptic to elongate-ellipsoid, smooth, 9–11 (–13) × 5–6.5 μ; cystidia thin-walled, subcylindric or subventricose-cylindric above a short pedicel, scattered on the sides, more numerous on the edges of the lamellae, 60–75 × 12–18 μ.

TYPE LOCALITY: Houghton, Michigan.
HABITAT: In swampy or mossy wet places in cedar and hemlock woods.
DISTRIBUTION: Michigan and New York.

77. **Inocybe pallidobrunnea** C. H. Kauffman, sp. nov.

Pileus thin, subconic at first, then campanulate, expanded-umbonate, the umbo obtuse, 1.5–3 cm. broad; surface dry, silky, sometimes innately minute-scaly, uniformly tawny-olive (R) to cinnamon (R); margin even; context pallid; lamellae adnate, narrow, crowded, white then pale-fuscous, the edges white-fimbriate; stipe firm, equal, slightly subbulbous to attenuate at the base, flexuous, solid, pruinose at the apex, naked elsewhere, white-mycelioid at the base, colored like the pileus but paler, pallid within, 3–6 cm. long, 2–4 mm. thick; spores ellipsoid, smooth, inequilateral, 9–10 (–12) × 5–5.5 μ; cystidia thin-walled or slightly thickened, slender, subventricose-subcylindric above a pedicel, subobtuse at the apex, hyaline, not abundant on the sides, more on the edges of the lamellae, 70–90 (–95) × 12–15 μ.

Type collected on the ground in frondose woods, Ann Arbor, Michigan, August 15, 1915, *C. H. Kauffman* (herb. Univ. Mich.).
DISTRIBUTION: Michigan.

78. **Inocybe agglutinata** Peck, Ann. Rep. N. Y. State Mus. **41**: 67. 1888.

Pileus thin, subconic, then campanulate or convex, umbonate, 1–3 cm. broad; surface fibrillose, dry, streaked with appressed-agglutinate fibrils, pale-tawny, the umbo usually darker; lamellae adnexed, close, broad, ventricose, at first whitish then brownish-cinnamon, the edges white-fimbriate; stipe firm, equal, solid, white or whitish, pruinose at the apex, brownish or tawny or fibrillose below, 3–5 cm. long, 2–4 mm. thick; spores elliptic-subcuneate in one view, inequilateral in the other view, smooth, obtuse at both ends, 9–11 (–12) × 5–5.5 (–6) μ; cystidia thick-walled, tapering below or with an abruptly slender pedicel, variable in shape, ovoid to ventricose-elliptic or subcylindric, hyaline, rather abundant on the sides, more on the edges of the lamellae, 50–60 (–70) × 12–18 μ.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: In coniferous woods.
DISTRIBUTION: New England and New York.

79. **Inocybe virgata** Atk. Am. Jour. Bot. **5**: 218. 1918.

Pileus thin, campanulate, then expanded, umbonate, 1.5–2.5 cm. broad; surface dry, innately silky, the umbo very dark-brown, paler toward the margin; margin virgate and subrimose; lamellae adnate, sinuate-uncinate, subdistant, broad, subventricose, whitish at first, at length fulvo-olivaceous, the edges white-fimbriate; stipe equal, concolorous, paler above, white-mycelloid at the base, brown-tinged within, 5–7 cm. long, 3–4 mm. thick; spores ellipsoid, ovoid-elliptic or ovoid, smooth, inequilateral, 7–10 (–11) × 5–6 μ; cystidia thin-walled, or slightly thickened, elliptic-subcylindric to ventricose-subovoid or broadly clavate, obtuse or rounded, tapering to a short pedicel, hyaline, scattered on the sides, more on the edges of the lamellae, 40–65 × 15–22 μ.

TYPE LOCALITY: Oakland, Maryland.
HABITAT: On low moist ground or in swamps.
DISTRIBUTION: Maryland, Washington, and Oregon.

80. **Inocybe connexa** C. H. Kauffman, sp. nov.

Pileus thin, subconic to campanulate, then convex-expanded, obtusely umbonate, 2–3.5 cm. broad; surface dry, innately silky-fibrillose, sometimes slightly scaly, yellow-ocher (R); margin paler, white-silky; context white, the odor farinaceous; lamellae sinuate-adnexed, close, rather broad, white at first then grayish-clay-colored, the edges white-fimbriate; stipe subequal, subbulbous, somewhat loosely fibrillose, stuffed, white or whitish, mycelioid at the base, 3–5 cm. long, 3–6 mm. thick; spores elliptic-ovoid, smooth, inequilateral, 8–9.5 (–10) × 5–5.5 (–6) μ; cystidia thin-walled, subcylindric to subventricose, tapering to a slender pedicel, hyaline, scattered on the sides, clustered-tufted on the edges of the lamellae, 60–75 × 12–18 (–20) μ.

Type collected on the ground under pines, Stow, Massachusetts, September 25, 1916, *Simon Davis* (herb. Univ. Mich.).

DISTRIBUTION: New England, New York, and Wyoming.

81. **Inocybe subochracea** (Peck) Earle, Torreya 3: 170. 1903.

Agaricus (*Hebeloma*) *subochraceus* Peck, Ann. Rep. N. Y. State Mus. 23: 95. 1872.
Hebeloma subochracea Sacc. Syll. Fung. 5: 796. 1887.

Pileus rather fleshy, subconic to subovoid at first, then convex-expanded, obtusely umbonate or the umbo obsolete, 2–3.5 cm. broad, rarely broader; surface dry, appressed-fibrillose or at length appressed-subscaly or sublacerate, yellow-ocher (R) to ochraceous-buff (R), sometimes tawny on the disk; margin rarely subrimose; context whitish or tinged yellowish; lamellae sinuate-adnexed, close, not broad, whitish at first, then honey-yellow (R) to tawny-olive (R), the edges white-flocculose; stipe equal, more or less subbulbous, solid, subfibrillose, whitish, becoming sordid-pale-ochraceous, white within, 3–6 (–9) cm. long, 3–4 (–7) mm. thick; spores ellipsoid-subcuneate in one view, inequilateral in the other view, smooth, 7–9 × 4.5–5.5 μ; cystidia thick-walled, often with yellowish content, slender, fusoid to sublanceolate, abundant on the sides and the edges of the lamellae, 60–75 (–80) × 10–15 μ.

TYPE LOCALITY: Sandlake, New York.
HABITAT: In frondose and coniferous woods.
DISTRIBUTION: New England to North Carolina, Tennessee, and Michigan; Oregon and Washington.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. 54: *pl. H, f. 23–29;* Hard, Mushr. *f. 281.*

82. **Inocybe submuricellata** Atk. Am. Jour. Bot. 5: 216. 1918.

Pileus thin, campanulate, then expanded and umbonate, 2–3 cm. broad; surface dry, finely fibrillose-scaly, clay-colored (R) to pale-ochraceous; lamellae attenuate-adnexed, pale-clay-colored, the edges white-fimbriate; stipe equal, fibrillose-striatulate, pruinose at the apex, with loose fibrils downward, 4–5 cm. long, 3–4 mm. thick; spores ellipsoid-ovoid, inequilateral, 8–10 (–12) × 5–6 μ; cystidia moderately thick-walled, ventricose-subcylindric above a slender pedicel, hyaline, sometimes constricted below the apex, abundant on the sides and the edges of the lamellae, 50–70 × 10–15 (–20) μ.

TYPE LOCALITY: Ithaca, New York.
HABITAT: Under coniferous trees.
DISTRIBUTION: Known only from the type locality.

83. **Inocybe marmoripes** Atk. Am. Jour. Bot. 5: 213. 1918.

Pileus rather fleshy, convex, obtuse, 2–5 cm. broad; surface dry, appressed-fibrillose-scaly, sometimes squarrose with erect scales on the disk, ochraceous-tawny (R) or Dresden-brown (R); context pallid; lamellae adnate, narrow, tawny-olive to olive, then darker, the edges white-fimbriate; stipe equal or slightly enlarged at the base, at first clothed with a thin lanuginose covering, which breaks into floccose-fibrillose scales in an irregular concentric manner, stuffed, ochraceous-tawny, 3–5 cm. long, 3–6 mm. thick; spores narrow, elongate-suboblong, not subreniform, subinequilateral, slightly narrowed toward one end, smooth, 9–13 × 3.5–5 μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: New York, Maryland, and Washington.

84. **Inocybe calamistrata** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 454. 1879.

Agaricus (*Inocybe*) *calamistratus* Fries, Syst. Myc. 1: 256. 1821.

Pileus slightly fleshy, campanulate-convex, obtuse, 1–4 cm. broad; surface dry, soon broken up into dense, bister-colored (R), squarrose scales; context becoming reddish-tinted when cut, darker with age; lamellae adnate-seceding or becoming sinuate, broad, close, soon army-brown (R), at length rusty-sprinkled, the edges white-flocculose; stipe equal or tapering up or down, firm, subrigid, solid, clothed with recurved, fibrillose scales, at length fibrillose, fuscous to bone-brown, paler above, smoky-greenish-blue below, 4–8 cm. long, 2–5 mm. thick; spores subreniform, oblong, smooth, obtuse at both ends, 10–12 (–13) × 5–6 μ; cystidia none; sterile cells clavate-saccate, on the edges of the lamellae.

TYPE LOCALITY: Sweden.
HABITAT: In coniferous and frondose woods.
DISTRIBUTION: New England to North Carolina, through Canada and Michigan; Washington and Oregon; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 389* (*407*); Fries, Ic. Hymen. *pl. 106, f. 2;* Gill. Champ. Fr. *pl. 343* (*360*).

85. **Inocybe mutata** (Peck) Massee, Ann. Bot. **18**: 496. 1904.

Agaricus (*Hebeloma*) *mutatus* Peck, Ann. Rep. N. Y. State Mus. **24**: 69. 1872.
Hebeloma mutatum Sacc. Syll. Fung. **5**: 797. 1887.

Pileus thin, conic at first, then campanulate to expanded-umbonate, 1.5–2.5 cm. broad; surface dry, squarrose-scaly to fibrillose-scaly, at length often denuded, dark-brown to wood-brown; lamellae emarginate-adnexed, broad, at first rounded behind, close, whitish then pale-brown to darker; stipe slender, equal, solid, floccose-scaly, sometimes subsquarrose, often curved at the base, concolorous, 5–8 cm. long, 2–4 mm. thick; spores subreniform, oblong, obtuse at both ends, smooth, 9–10 (–12) × 5–6 μ; cystidia none; sterile cells clavate-saccate, on the edges of the lamellae.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: On damp ground in coniferous or mixed woods.
DISTRIBUTION: New England to North Carolina.

86. **Inocybe Caesariata** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 459. 1879.

Agaricus (*Inocybe*) *Caesariatus* Fries, Epicr. Myc. 176. 1838.
Inocybe fibrillosa Peck, Ann. Rep. N. Y. State Mus. **41**: 65. 1888.

Pileus somewhat fleshy, broadly convex, obtuse, 2–5 cm. broad; surface dry, at first densely tomentose-fibrillose, at length appressed-fibrillose-scaly or subsquarrose-scaly, varying yellow-ocher (R), ochraceous-buff (R), or tawny; margin appressed-fibrillose, incurved, and at first connected with the stem by a veil; context white, at length ochraceous-tinged; lamellae adnate-seceding or at length subdecurrent by a tooth, rounded behind, rather broad, ventricose, dull-ochraceous-yellowish to rusty-ochraceous, the edges white-flocculose; stipe equal, usually short, densely floccose-fibrillose, sometimes subscaly, concolorous, stuffed to hollow, flocculose-scurfy at the apex, ochraceous-tinged within, 1.5–4 cm. long, 2–6 mm. thick; spores subrenis form, short-oblong, obtuse at both ends, smooth, 8–10 × 5–6 μ; cystidia none; sterile cell-clavate-pyriform, on the edges of the lamellae.

TYPE LOCALITY: Sweden.
HABITAT: On bare ground, in grass, etc., in moist places.
DISTRIBUTION: New England to Virginia, west to Minnesota and Missouri; Washington, Idaho, and Wyoming; also in Europe.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 109;* Ricken, Blätterp. Deutschl. *pl. 31, f. 4.*

87. **Inocybe Lorillardiana** Murrill, Mycologia **3**: 101. 1911.

Pileus somewhat fleshy, subconic to convex, expanded-subumbonate, or obtuse, 1.5-3 (–4) cm. broad; surface dry, at first tomentose, then appressed-fibrillose-scaly, sometimes squarrose on the disk, yellowish-brown; context pale-yellow; lamellae broadly adnexed, crowded, moderately broad, at first whitish to pale-olive-buff (R), finally tawny-olive (R), the edges white-fimbriate; stipe equal or slightly tapering down, stuffed, the surface at first with thin tomentose

covering, which on breaking produces conspicuous floccose scales of rusty fibrils, paler between scales, 3–5 cm. long, 2–5 mm. thick; spores subreniform, oblong-ellipsoid, smooth, 8–10 (–12) × 5–5.5 μ; cystidia none; sterile cells clavate or subcapitate, on the edges of the lamellae.

TYPE LOCALITY: Bronx Park, New York City.
HABITAT: In grassy places and on lawns.
DISTRIBUTION: New York to Virginia and Missouri.
ILLUSTRATION: Mycologia **3**: *pl. 40, f. 9.*

88. **Inocybe unicolor** Peck, Ann. Rep. N. Y. State Mus. **50**: 104. 1897.

Pileus thin, subconic to convex, then expanded, obtuse or plane, firm, 1–3 cm. broad; surface dry, tomentose-squamulose or squarrose-scaly, sometimes with erect scales, sometimes densely tomentose, honey-yellow to grayish-ochraceous, drying to "isabella color" (R); margin even, fibrillose; lamellae adnate, subdistant, broad, subventricose, pale-ochraceous at first, then tawny-brown with slight olive tint; stipe firm, equal, solid, fibrillose-squamulose, glabrescent, bulbillate, 1.5–3 cm. long, 2–5 mm. thick; spores 9–12 × 5–5.5 μ; elliptic, smooth, obtuse, subreniform; cystidia none; sterile cells saccate, on the edges of the lamellae.

TYPE LOCALITY: Menands, New York.
HABITAT: In open places on the ground.
DISTRIBUTION: New York to North Carolina and Ohio.

89. **Inocybe subrubescens** Atk. Am. Jour. Bot. **5**: 216. 1918.

Pileus slightly fleshy, campanulate, then expanded-umbonate, 1.5–2.5 cm. broad; surface dry, coarsely appressed-fibrillose-scaly on and about the umbo, more finely scaly toward the margin, dull-ochraceous, becoming suffused with a reddish color; lamellae adnexed, elliptic, whitish at first, then Mars-brown (R); stipe equal, solid, white, scurfy at the apex, subfibrillose downward, subochraceous, then tinged reddish, flesh-white becoming reddish, 4–5 cm. long, 4–6 mm. thick; spores subreniform, elliptic-ovoid, smooth, 12–15 (–17) × 6–7 (–8) μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

90. **Inocybe jurana** (Pat.) Sacc. Syll. Fung. **5**: 778. 1887.

Agaricus (*Inocybe*) *juranus* Pat. Tab. Fung. **2**: 23. 1886.
Inocybe frumentacea Bres. Fungi Trid. **2**: 87. 1900.

Pileus fleshy, rigid-firm, ovoid-campanulate, then expanded and broadly umbonate, 3–8 cm. broad; surface innately fibrillose, becoming lacerated at times, at length more or less rimose, dry, the fibrils and scales brown-purplish to reddish-chestnut, assuming a dark vinaceous or purplish color with age; context white, thick, vinaceous under the cuticle; lamellae adnexed, then emarginate with a subdecurrent tooth, close, not broad, thickish, white at first, then brownish-avellaneous, becoming rufescent-spotted, the edges white-flocculose; stipe rather stout, equal, terete or compressed, stuffed, sometimes twisted, fibrillose, subflocculose at the apex, whitish at first, then rufous-vinaceous with age or when bruised, 3–8 cm. long, 6–12 mm. thick; spores broadly elliptic-subreniform, smooth, the epispore strongly colored under the microscope, 10–12 × 6–7 μ; cystidia none; sterile cells clavate to subcylindric, on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: In low frondose woods.
DISTRIBUTION: Michigan and Ohio; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 87, 200;* C. H. Kauffman, Agar. Mich. *pl. 92* (as *I. frumentacea jurana*); Pat. Tab. Fung. *f. 551.*

91. **Inocybe tenerrima** Atk. Am. Jour. Bot. **5**: 216. 1918.

Pileus membranous, conic to subcampanulate-umbonate, 3–4 mm. broad and high; surface dry, reddish-brown nearly Brussels-brown (R), loosely fibrillose-scaly; lamellae adnate-adnexed, ventricose, avellaneous (R) then pale-umber-brown; stipe filiform, solid, equal, loosely fibrillose from the universal veil, pruinose at the apex, concolorous or darker at the base, 2–3 cm. long,

1 mm. thick; spores ellipsoid-fabiform, inequilateral, smooth, 9–12 (–15) × 6–7 (–8) μ; cystidia none; sterile cells subcylindric-subventricose or subcapitate, small, on the edges of the lamellae.

TYPE LOCALITY: Danby, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

92. **Inocybe anomala** Murrill, Mycologia 8: 312. 1916.

Melanoleuca anomala Murrill, Mycologia 5: 214. 1913.

Pileus plane, solitary, 2 cm. broad; surface dry, decorated with dense, minute, hairy fascicles ferruginous; margin entire, concolorous or slightly paler; lamellae adnate to slightly sinuate, broad, not rounded, ventricose, white becoming lateritious where bruised; stipe equal, cylindric, fragile, even, glabrous above, fibrillose below, solid or stuffed, isabelline, 3.5 cm. long, 3 mm. thick; spores ellipsoid, smooth, pale-yellowish-brown, 5–6 × 3–4 μ; cystidia none.

TYPE LOCALITY: Palo Alto, California.
HABITAT: Under redwood trees.
DISTRIBUTION: Known only from the type locality.

93. **Inocybe subdecurrens** Ellis & Ev. Jour. Myc. 5: 27. 1889.

Inocybe tomentosa Ellis & Ev. Jour. Myc. 5: 26. 1889.

Pileus rather thin, subovoid at first, then convex, subexpanded to plane, obtuse, umbonate, or subdepressed with age, 2–4 (–5) cm. broad; surface dry, with a thin lanuginose covering, or appressed-pilose, nonrimose, tawny-olive(R) at first fading to cinnamon-buff (R), sublutescent; context moist at first then pallid; lamellae broadly adnate, subdecurrent by a tooth or line, rather broad, close, seceding, pallid at first then ochraceous-tawny (R), then cinnamon-brown (R), the edges minutely subfimbriate; stipe equal, stuffed, soon hollow, slightly and loosely fibrillose, or fibrillose-striate, whitish to cinnamon-buff, white-mycelioid at the base, 2.5–4 cm. long, 3–5 mm. thick; spores elliptic-oblong, not reniform, smooth, obtuse at both ends, variable in size, 8–10 (–12) × 5–5.5 (–6) μ; cystidia none; sterile cells short, on the edges of the lamellae.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: In mixed woods.
DISTRIBUTION: Canada to Virginia and Alabama; Wyoming.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1906*.

94. **Inocybe subtomentosa** Peck, Ann. Rep. N. Y. State Mus. 48: 109. 1897.

Pileus slightly fleshy, dry, convex, then expanded, 1–4 (–5) cm. broad; surface minutely or obscurely tomentose, nonlacerate, uniformly brownish-tawny, nonrimose; lamellae adnate, subemarginate, close, whitish at first then yellowish-olivaceous, finally brownish-tawny, the edges white-flocculose; stipe short, solid, slightly silky-fibrillose, concolorous or paler than the pileus, 1.5–2.5 cm. long, 2–3 mm. thick; spores subellipsoid, short, nonreniform, obtuse at both ends, 7–8.5 (–9) × 5–6 μ; cystidia none; sterile cells prominent, on the edges of the lamellae.

TYPE LOCALITY: Rouse's Point, New York.
HABITAT: In gravelly soil.
DISTRIBUTION: New England and New York.

95. **Inocybe Cookei** Bres. Fungi Trid. 2: 17. 1892.

Pileus rather thin, subconic-campanulate, expanded-umbonate, 1.5–4 cm. broad; surface innately silky-fibrillose, dry, rimose, glabrous on the center, straw-yellow, becoming sordid-lutescent; margin at length wavy and split; context whitish; lamellae sinuate-adnexed or almost free, scarcely subventricose, narrow, close, white at first soon tinged cinereous, then ochraceous-cinnamon, the edges white-fimbriate; stipe equal, solid, innate-silky-fibrillose, pruinose at the apex, with a distinct, emarginate bulb, whitish-lutescent, 2.5–5 cm. long, 3–5 mm. thick; spores subreniform, ellipsoid-oblong, obtuse at both ends, smooth, 8–10 × 4.5–5.5 μ; sterile cells clavate, on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: On mossy ground in coniferous and mixed woods.
DISTRIBUTION: New England to North Carolina, and westward to Michigan; also in Europe.
ILLUSTRATION: Bres. Fungi Trid. *pl. 121*.

96. **Inocybe lanatodisca** C. H. Kauffman, Agar. Mich. 459. 1918.

Pileus slightly fleshy, subovoid, then convex-campanulate, obtuse or broadly umbonate, 2–4 cm. broad; surface dry, at first covered with a white, mold-like silkiness, later subzonate by the subconcentric arrangement of the white fibrils, rimose, ground-colored, pale-ochraceous-brownish, or pale-tawny; context white, the odor nauseous when crushed; lamellae adnexed-emarginate, moderately broad, close, at length cinereous-alutaceous, the edges white-fimbriate; stipe equal or subequal, solid, glabrescent, pruinate-scaly at the apex, white, becoming pale-sordid-yellowish with age, 3–5 cm. long, 4–6 mm. thick; spores subreniform, ellipsoid, obtuse at both ends, smooth, 9–10.5 × 5–6 μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

TYPE LOCALITY: Ann Arbor, Michigan.
HABITAT: On low ground in frondose woods.
DISTRIBUTION: New York and Michigan.

97. **Inocybe fastigiata** (Schaeff.) P. Karst. Bidr. Finl. Nat. Folk **32**: 461. 1879.

Agaricus fastigiatus Schaeff. Fung. Bavar. *pl. 26*. 1762,
Agaricus (*Inocybe*) *fastigiatus* Fries, Epicr. Myc. 174, in part. 1838.
Agaricus (*Inocybe*) *servatus* Britz. Jahresb. Nat. Ver. Augsburg **28**: 154. 1885.

Pileus thin, conic, then conic-campanulate, sometimes ovoid-campanulate, at length subexpanded, usually with a more or less acute, prominent umbo, 2–7 cm. broad; surface dry, innately radially fibrillose, virgate, long-rimose, dull-yellow-ocher (R) to rich yellowish-fuscous, sometimes bister on the umbo, sometimes paler; margin finally split or repand; context white, the odor strong and disagreeable, or lacking; lamellae adnexed, becoming sinuate-free, narrower posteriorly, not broad, subventricose, close to crowded, whitish at first soon tinged olive or gray, darker with age; stipe equal or tapering upward, solid, subfibrillose, sometimes twisted, white or slightly fuscescent, 4–8 cm. long, 4–10 mm. thick; spores subreniform, elliptic in the other view, obtuse at both ends, smooth, 9–12 × 5–6 μ; cystidia none; sterile cells saccate, on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: On the ground in moist woods.
DISTRIBUTION: New England and Canada to Virginia and Alabama, and westward to Minnesota; Washington, Oregon, and Idaho; also in Europe.
ILLUSTRATIONS: Berk. Outl. Brit. Fungol. *pl. 8, f. 4;* Bres. Fungi Trid. *pl. 57;* Cooke, Brit. Fungi *pl. 383) 426);* E. & P. Nat. Pfl. 1^{1**}: 242. *f. 117;* Fries, Ic. Hymen. *pl. 108, f. 1;* C. H. Kauffman, Agar. Mich. *pl. 93;* Pat. Tab. Fung. *f. 343;* Richon & Roze, Atl. Champ. *pl. 21, f. 9–14;* Ricken, Blätterp. Deutschl. *pl. 31, f. 1.*

98. **Inocybe rimosoides** Peck, Bull. N. Y. State Mus. 150: 32. 1911.

Pileus thin, subconic to broadly campanulate, subexpanded or repand, the umbo prominent, often subacute, 2–4 cm. broad; surface dry, innately silky-fibrillose, shining, radially long-rimose, splitting on the margin, maize-yellow (R) to chamois (R); context white, moist; lamellae sinuate-adnexed or almost free, sometimes subdecurrent by a tooth, narrow, crowded, whitish then avellaneous to rusty-cinnamon, the edges white-fimbriate; stipe slender, equal or with subbulbous base, strict, solid at first, soon hollowed by grubs, pruinose at the apex, glabrous elsewhere, pallid, whitish within, 2.5–6 cm. long, 2–4 mm. thick; spores subreniform, elliptic, smooth, obtuse at both ends, 8–9 (–10) × 4.5–5 μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

TYPE LOCALITY: Menands, New York.
HABITAT: In grassy places and open woods.
DISTRIBUTION: New England to North Carolina, and westward to Michigan.

99. **Inocybe Curreyi** (Berk.) Sacc. Syll. Fung. **5**: 775. 1887.

Agaricus (*Hebeloma*) *Curreyi* Berk. Outl. Brit. Fungol. 155. 1860.

Pileus rather thin, irregularly convex-campanulate, obtuse, not umbonate, often gibbous, 2–4 cm. broad; surface innately fibrillose at length rimose, pale-tawny-yellowish; margin usually wavy; context white; lamellae slightly adnexed, rather broad and rounded behind, close,

becoming smoky-olivaceous, the edges white-fimbriate; stipe tapering upward from a subclavate base, not bulbous, solid, subfibrillose, glabrescent, whitish at first, furfuraceous-scaly at the apex, 2–4 cm. long, 2–4 mm. thick; spores subreniform, ellipsoid, obtuse at both ends, smooth, 7–9.5 × 5–5.5 μ; cystidia none; sterile cells clavate-saccate, on the edges of the lamellae.

TYPE LOCALITY: England.
HABITAT: On the ground in low woods.
DISTRIBUTION: Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 398 (428)*; Pat. Tab. Fung. *pl. 537*.

100. **Inocybe sororia** C. H. Kauffman, sp. nov.

Pileus thin, subconic to conic-campanulate, then expanded-umbonate, subconic or acute, 2–5 (–7) cm. broad; surface dry, innately silky-fibrillose, at length long-rimose, at first cream-colored (R) to straw-yellow (R) or mustard-yellow (R), sordid and darker with age, the umbo darker, prominent; margin at length split and recurved; context pallid or yellowish-tinted, dingy with age, the odor somewhat pungent or lacking; lamellae attenuate-adnate, rather narrow, varying 2–5 mm. wide, close to crowded, at first whitish or yellow-tinted, then olive-buff (R) to mustard-yellow (R) or old-gold (R), the edges white-fimbriate; stipe strict, equal or tapering upward above the rounded, subbulbous base, the bulb subobsolete, at first silky-cortinate, glabrescent, innately fibrillose, solid, pruinose at the apex, whitish, becoming dingy with age, 3–7 cm. long, 2–4 (–5) mm. thick; spores elliptic or elongate-ellipsoid, not truly subreniform, subinequilateral, obtuse at both ends, very variable in size, 9–13 (–16) × 5.5–6 (–8) μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

Type collected on the ground in frondose woods, Ann Arbor, Michigan, July 23, 1920, *D. V. Baxter* (herb. Univ. Mich.).
DISTRIBUTION: New England to Virginia, and westward to Oregon and Washington.

101. **Inocybe fastigiella** Atk. Am. Jour. Bot. **5**: 211. 1918.

Inocybe rimosa Ricken, Blätterp. Deutschl. 111. 1911. Not *I. rimosa* Pat.1887.
Inocybe brunnescens Atk. Am. Jour. Bot. **5**: 211. 1918. Not *I. brunnescens* Earle, 1904.

Pileus slightly fleshy, ovoid-campanulate, then expanded-umbonate, 2–5 (–6) cm. broad; surface dry, innately fibrillose, sometimes slightly lacerate-scaly, radially rimose, Prouts-brown (R) to tawny-olive (R), becoming clay-colored (R), drying darker, the umbo sepia (R), obtuse; margin at length split or repand; context white or pallid; lamellae sinuate-adnexed or almost free, narrow, crowded, scarcely ventricose, pallid at first, then avellaneous to cinereous-clay-colored, darker with age, the edges white-fimbriate; stipe equal above the subbulbous base, slightly fibrillose, glabrescent, solid, often curved downward, whitish, brunnescent with age, white-pruinose, at the apex white within, 4–8 cm. long, 4–7 mm. thick; spores subreniform, short-ellipsoid, smooth, 7–9 (–10) × 4.5–5.5 μ; cystidia none; sterile cells clavate-saccate, on the edges of the lamellae.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in low frondose or mixed woods.
DISTRIBUTION: New England to North Carolina, and Alabama, and westward to Michigan and Missouri; also in Europe.
ILLUSTRATION: Ricken, Blätterp. Deutschl. *pl. 30, f. 8*.

102. **Inocybe umbrinella** Bres. Ann. Myc. **3**: 161. 1905.

Pileus somewhat fleshy, campanulate to expanded-umbonate, rarely papillate or gibbous, 2.5–5 cm. broad; surface silky, at length rimose, lubricous-umber to lurid-gray, umber-cinnamon on the disk; context white, the odor lacking; lamellae sinuate-adnate, crowded, whitish at first, at length umber-colored; stipe equal above the subbulbous base, solid, fibrillose-pruinate, furfuraceous-subflocculose at the apex, glabrescent, white, fuscescent below, 3–5 cm. long, 3–6 mm. thick; veil white, cortina-like, evanescent; spores subreniform, elliptic, smooth, 10–12 (–13) × 5.5–6.5 (–7) μ; cystidia none; sterile cells on the edges of the lamellae.

TYPE LOCALITY: Austria.
HABITAT: In mixed woods.
DISTRIBUTION: Virginia; also in Europe.

103. **Inocybe squamosodisca** Peck, Bull. N. Y. State Mus. 75: 18. 1904.

Pileus fleshy, firm, convex, 2–5 cm. broad; surface dry, innately silky, fibrillose on the margin, glabrous elsewhere except on the diffracted-scaly disk, ochraceous-buff; context whitish or yellowish-white; lamellae adnate, rather broad, moderately close, pale-ochraceous, becoming darker with age; stipe short, firm, equal, solid, innately fibrillose, concolorous, 2–4 cm. long, 4–6 mm. thick; spores subreniform, smooth, elliptic-oblong, 8–10 × 5–6 μ; cystidia none; sterile cells clavate, on the edges of the lamellae.

TYPE LOCALITY: Scanandaga Lake, New York.
HABITAT: Under pine trees.
DISTRIBUTION: New York.
ILLUSTRATION: Bull. N. Y. State Mus. 75: *pl. O, f. 10–13.*

104. **Inocybe brunnescens** Earle, Bull. N. Y. Bot. Gard. **3**: 300. 1904.

Pileus somewhat fleshy, campanulate and subgibbous, then obtusely expanded, 3–7 cm. broad; surface dry, superficially radiate-fibrillose, with minute, floccose scales on the disk, shining, dry, brown, shading to chestnut on the margin, paler on the disk; margin nonrimose, rarely laciniate, at length repand; lamellae subsinuate by a small decurrent tooth, close, broad, ochraceous-brown, the edges white-fimbriate; stipe equal, glabrous or subfibrillose, solid, whitish, brown below, white within and unchangeable, 5–7 cm. long, 8–12 mm. thick; spores subreniform, elliptic, smooth, obtuse at both ends, 8–10 × 5–6 μ; cystidia none; sterile cells on the edges of the lamellae.

TYPE LOCALITY: New York Botanical Garden, New York City.
HABITAT: On decaying oak leaves.
DISTRIBUTION: Known only from the type locality.

105. **Inocybe glaber** C. H. Kauffman, Agar. Mich. 468. 1918.

Pileus thin, at first narrowly elliptic-ovoid, then campanulate-expanded and umbonate, 1.5–3.5 cm. broad; surface glabrous to subfibrillose, moist, the umbo sublubricous, sordid-ochraceous-brown to livid-brown; context becoming soft and fragile in wet weather, the odor nauseous or slightly radishy; lamellae almost free, rather narrow, close, pallid then pale-fuscous-brown, the edges white-fimbriate; stipe glabrous, equal above the bulbillate base, even, solid, white or pallid, 3.5–5 cm. long, 2.5–4 mm. thick; spores subreniform, smooth, 7–9 × 4–5 μ; cystidia none; sterile cells subcylindric to capitate, on the edges of the lamellae.

TYPE LOCALITY: Ann Arbor, Michigan.
HABITAT: In low frondose woods.
DISTRIBUTION: Michigan.

DOUBTFUL AND EXCLUDED SPECIES

Inocybe coloradoensis (Tracy & Earle) Earle, Torreya **3**: 169. 1903. (*Naucoria coloradoensis* Tracy & Earle, in Greene, Pl. Baker. **1**: 25. 1901.) This has somewhat the appearance of *Inocybe unicolor*, but the spores are different.

Inocybe diminuta Peck, Bull. N. Y. State Mus. 105: 23. 1906.

Inocybe leptocystella Atk. Am. Jour. Bot. **5**: 212. 1918.

Inocybe nodulispora (Peck) Sacc. Syll. Fung. **9**: 95. 1891. (*Agaricus nodulisporus* Peck, Ann. Rep. N. Y. State Mus. **32**: 28. 1880.)

Inocybe strigosa Peck, Bull. N. Y. State Mus. 131: 116. 1909. (*Paxillus strigosus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 56. 1873.)

Inocybe subroindica Banning; Peck, Ann. Rep. N. Y. State Mus. **44**: 182. 1891. (*I. rubroindica* Sacc. Syll. Fung. **11**: 52. 1895.)

Inocybe tuberosa Clements, Bot. Surv. Neb. **2**: 40. 1893. Not seen.

Inocybe umboninota Peck, Bull. N. Y. State Mus. 139: 58. 1910. (*Agaricus umboninotus* Peck, Ann. Rep. N. Y. State Mus. **38**: 87. 1885.) There are two different collections at Albany corresponding to these citations, but the material on which the original description is based is not the same as that described in 1910, here re-named *I. prominens.*

Subtribe 3. **PHOLIOTANAE** (key, continued*)

(Lamellae not readily separable from the context.)
Volva or annulus present.
Volva absent, annulus present, the latter not conspicuous when the veil is arachnoid.
Annulus continuous, conspicuous.
Stipe glabrous or fibrillose. 74. PHOLIOTA.
Stipe squarrose-scaly. 75. HYPODENDRUM.
Annulus arachnoid, inconspicuous; universal veil arachnoid and distinct from the cuticle. 76. CORTINARIUS.
Volva present, annulus absent. 77. LOCELLINA.
Volva and annulus both present. 78. ROZITES.

74. PHOLIOTA† (Fries) Quél. Champ. Jura Vosg. 91. 1872.

Agaricus § *Pholiota* Fries, Syst. Myc. **1**: 240. 1821.
Pholiotina Fayod, Ann. Sci. Nat. VII. **9**: 359. 1889.
Pholidotopsis Earle, Bull. N. Y. Bot. Gard. **5**: 443. 1909.

Plants fleshy, putrescent, solitary to cespitose, geophilous or xylophilous; pileus glabrous to distinctly scaly; lamellae adnexed to slightly decurrent; spores ferruginous to fuscous, smooth or rough; stipe central, fleshy, glabrous to fibrillose, or somewhat scaly (but not both pileus and stipe distinctly scaly unless the stipe is sheathed); veil present, forming a distinct though often evanescent annulus; typically with no brown sterile organs in the hymenium.

Type species, *Pholiota dura* (Bolt.) Quél.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA

Plants growing on the ground or among moss.
Spores elongate-ovoid or elongate-elliptic, smooth, 10–14 μ long; cystidia abundant, projecting conspicuously, flask-shaped with a long neck; pileus and stipe not scaly or the latter only slightly so at the very base; young plants distinctly brown or blackish-brown in color.
Plants less than 1.5 cm. broad; known only from the Pacific coast. 1. *P. subnigra.*
Plants 2–5 cm. broad; lamellae 2–4 mm. broad. 2. *P. aggericola.*
Plants 4–10 cm. broad; lamellae 4–7 mm. broad. 3. *P. ombrophila.*
Spores ovoid with a truncate apex, smooth, 8–10 μ or more long; rather large species, none less than 3 cm. broad when mature, not at all scaly, white to ochraceous or tan, often hygrophanous.
Spores 11–15 μ long. 4. *P. vermiflua.*
Spores 8–10 μ long.
Plants growing on the ground in open woods. 5. *P. Howeana.*
Plants growing on humus in rich woods. 38. *P. acericola.*
Plants growing in cultivated fields or in grassy places, rarely in open grassy woods or among straw and other waste vegetable matter carried into the woods.
Spores 4.5–6 μ broad; pileus white or tinged with yellow or tan; lamellae narrow or medium-broad, sometimes somewhat sinuate. 6. *P. candicans.*
Spores 6–7 μ broad; pileus ochraceous-yellow; lamellae very broad, obliquely truncate-sinuate. 7. *P. temnophylla.*
Spores 5–7 μ long, smooth; plants with fibrillose-scaly pileus and stipe; pileus 1–4 cm. broad. 20. *P. terrestris.*
Spores rough-walled; plants medium-sized to large, 3–15 cm. broad; annulus not median.
Plants dark-colored, i.e. golden-brown to umber or smoky. 16. *P. trachyspora.*
Plants bright-colored, i.e. ochraceous-buff to zinc-orange. 14. *P. McMurphyii*
Spores variable, typically truncate at the apex; plants with slender stipes and small pilei, none more than 4 cm. broad; with a prominent-persisting usually median annulus striate on the upper side; plants without scales.
Plants growing among *Polytrichum* moss. 12. *P. minima.*
Plants growing in wet places among *Sphagnum* moss. 13. *P. mycenoides.*
Plants growing on the ground or among leaf-mold, but not among moss.
Plants yellowish-red or dark-ferruginous and retaining these colors in herbarium specimens; stipe 1–2.5 cm. long. 8. *P. rugosa.*
Plants watery-brown when fresh, ochraceous in herbarium specimens; stipe 8–10 cm. long. 9. *P. blattaria.*
Spores 6.5–9 μ long.
Spores 9–10.5 μ long.
Stipe 2 mm. or more thick; medium-slender plants more than 1 cm. broad. 10. *P. togularis.*

* See N. Am. Flora **10**: 145, for the beginning of the key to the subtribe Pholiotanae.

† By LEE ORAS OVERHOLTS.

Stipe about 1 mm. thick; very slender plants less than 1 cm. broad. 11. *P. filaris.*
Spores variable; plants not having all the characters of any of the above sections.
Plants growing among *Polytrichum* moss; pileus less than 1 cm. broad. 12. *P. minima.*
Plants not as above.
Stipe conspicuously white-tomentose below the annulus; pileus isabelline tinted with rose; cystidia rather abundant; spores 8–10 μ long; plants western. 15. *P. albivelata.*
Plants not as above; spores usually smaller.
Stipe scaly; pileus yellowish-red or ochraceous-orange to tawny; brown cystidia abundant in the hymenium. 29. *P. rigidipes.*
Stipe not scaly; pileus pallid to ochraceous or cinnamon-buff; no brown cystidia present.
Plants less than 3 cm. broad; western. 17. *P. anomala.*
Plants more than 3 cm. broad; eastern.
Spores constantly 6 μ or less long; annulus membranous, disappearing. 18. *P. duroides.*
Spores, considerable number in each mount measuring as much as 8 or 9 μ; annulus a persistent cottony roll on the stipe. 19. *P. Johnsoniana.*
Spores uniformly 9–10.5 × 6–7 μ. 7. *P. temnophylla.*
Plants growing on wood or about stumps or around rotten logs.
Both pileus and stipe decidedly scaly; spores smooth; brown cystidia present or absent.
With brown cystidia in the hymenium. 29. *P. rigidipes.*
With hyaline projecting cystidia in the hymenium. 28. *P. Schraderi.*
Without cystidia.
Pileus 0.5–2.5 cm. broad; pileus and stipe densely covered with a sheath of small erect conic superficial scales. 21. *P. erinaceëlla.*
Pileus 1–3 cm. broad, covered with a dense coating of soft fibrillose scales that are erect, if at all, only in the center of the pileus; stipe sparingly scaly or only fibrillose, not sheathed. 22. *P. muricata.*
Pileus 6–15 cm. or more broad, with large floccose patches or scales. 40. *P. destruens.*
Either pileus or stipe (not both) scaly; spores smooth; brown cystidia absent.
Pileus glabrous.
Plants watery-brown or cinnamon, 1–3 cm. broad. 31. *P. mutabilis.*
Plants ochraceous-orange, 5 cm. or more broad. 30. *P. oregonense.*
Pileus floccose or scaly.
Plants bright ochraceous-orange throughout, 2–5 cm. broad. 23. *P. curvipes.*
Plants cinnamon-rufous or tawny, 1–2.5 cm. broad. 32. *P. confragosa.*
Plants pallid to fawn-colored, 6–15 cm. broad. 40. *P. destruens.*
Plants not entirely as in either of the above sections.
Heavy fleshy species, 6 cm. or more broad and 2.5 cm. or more thick when mature, pallid or wood-colored and with fibrillose or floccose scales or patches; spores smooth, cystidia none. 40. *P. destruens.*
Plants not entirely as above.
Spores rough and cystidia absent; pileus yellow to tawny, not hygrophanous.
Pileus viscid; a small ochraceous or tan-colored plant scarcely more than 2–3 cm. broad. 36. *P. discolor.*
Plants not entirely as above.
Pileus with distinct shades of green or ashy-green when young or on being handled; flesh green-tinged; lamellae bright-colored and remaining so in dried plants; pileus scaly with fibrillose scales. 24. *P. aeruginosa.*
Plants not entirely as above.
Pileus 2–5 cm. broad, typically pinkish-red in color, squamulose with innate scales; flesh usually pale-lavender; lamellae bright-colored in dried plants. 25. *P. luteofolia.*
Plants not entirely as above.
Pileus 4–15 cm. broad at maturity, dry, glabrous or fibrillose or if squamulose then the scales definitely formed by the separation of a fibrillose cuticle; taste bitter or amygdaline. 27. *P. spectabilis.*
Pileus hygrophanous, glabrous, otherwise as in *P. spectabilis.* 26. *P. cerasina.*
Spores smooth or rough, if rough, then flask-shaped; cystidia present.
Stipe scaly; pileus glabrous. 31. *P. mutabilis.*
Stipe glabrous; pileus scaly or strongly floccose-fibrillose. 32. *P. confragosa.*
Stipe fibrillose to glabrous; pileus glabrous.
Plants uniformly less than 4 cm. broad.
Lamellae conspicuously forked. 33. *P. furcata.*
Lamellae not at all forked.
Spores with a truncate apex, 6–8 μ long; cystidia none; veil evanescent. 34. *P. marginella.*

Spores not truncate, 7.5–9.5 μ long; flask-shaped cystidia present and projecting, though often not abundant.
Pileus hygrophanous; annulus evanescent. 35. *P. marginata.*
Pileus viscid; annulus subpersistent. 36. *P. discolor.*
Pileus dry or hygrophanous; annulus at first funnel-shaped, persistent and conspicuous. 37. *P. unicolor.*
Plants at maturity more than 4 cm. broad.
Spores rough-walled at maturity. 35. *P. marginata.*
Spores entirely smooth-walled.
Cystidia present, flask-shaped, strongly projecting; pileus often rugose; on rotten wood or on humus. 38. *P. acericola.*
Cystidia present and rather abundant but projecting only slightly and more fusoid than flask-shaped; on recently felled logs or in wounds of living trees. 39. *P. Aegerita.*

II. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Spores rough-walled.
Plants growing among moss on the ground. 41. *P. bryophila.*
Plants growing on wood.
Pileus 3–10 cm. broad. 42. *P. Brittoniae.*
Pileus 0.5–2 cm. broad. 37. *P. unicolor.*
Spores smooth.
Spores 6–8 μ long.
Plants growing on the ground. 43. *P. cubensis.*
Plants growing on wood.
Pileus squamulose, reddish-brown in color. 44. *P. martinicensis.*
Pileus granular-tomentose, ochraceous in color. 45. *P. cinchonensis.*
Spores 8.5–10 μ long. 46. *P. avellanea.*
Spores 12–14 μ long. 47. *P. Broadwayi.*
Spores 16–20 μ long. 48. *P. Musae.*

1. **Pholiota subnigra** Murrill, Mycologia 4: 258. 1912.

Pileus 1.3 cm. broad, convex, slightly umbonate, uniformly fuscous or dusky-drab except on the margin where a hoary pubescence remains from the veil, otherwise glabrous, slightly viscid; lamellae sinuate-adnate, ventricose, medium-close, becoming fulvous, the edges whitish, 2 mm. broad; veil forming a persistent, white, superior, membranous annulus; stipe central, equal, pallid, rough with short, soft, whitish, conic scales pointing upward, solid, 2 cm. long, 2.5 mm. thick; spores somewhat elongate-ellipsoid, smooth, 10–13 × 5–6 μ; cystidia abundant, projecting, conspicuous, flask-shaped.

TYPE LOCALITY: Seattle, Washington.
HABITAT: Attached to a small buried root.
DISTRIBUTION: Known only from the type locality.

2. **Pholiota aggericola** (Peck) Sacc. Syll. Fung. 5: 740. 1887.

Agaricus aggericola Peck, Ann. Rep. N. Y. State Mus. 24: 67. 1872.
Agaricus indecens Peck, Ann. Rep. N. Y. State Mus. 30: 40. 1878.

Pileus 1–5 cm. broad, convex becoming plane or slightly depressed, rarely slightly umbonate, at first brown or blackish-brown, drying out to ochraceous-tawny or buckthorn-brown, or slightly darker in herbarium plants, somewhat viscid when moist, glabrous, even or somewhat reticulate, slightly striatulate at times on the margin; lamellae adnate or slightly decurrent, medium-close or slightly distant, 2–4 mm. broad, pallid or grayish, becoming rusty-brown, ochraceous-tawny to cinnamon in dried plants; veil forming a thin persistent, white, membranous, superior annulus; stipe central, equal, brownish below, white above the annulus, solid, pruinose above the annulus, fibrillose or glabrous below, or at times slightly squamulose at the base, 2.5–7 cm. long, 3–8 mm. thick; spores elongate-elliptic or elongate-ovoid, smooth, 11–15 × 5.5–7.5 μ; cystidia present, usually abundant, hyaline, 5–6 μ broad, projecting 30–40 μ.

TYPE LOCALITY: Greig, New York.
HABITAT: On the ground by roadsides and in woods.
DISTRIBUTION: Massachusetts, Connecticut, New York, and New Jersey.

3. **Pholiota ombrophila** (Fries) Sacc. Syll. Fung. 5: 737. 1887.

Agaricus ombrophilus Fries, Hymen. Eur. 216. 1874.
Pholiota washingtonensis Murrill, Mycologia 4: 259. 1912.

Pileus 3–10 cm. broad, campanulate-convex to nearly plane, dull-brown, close to wood-brown or Verona-brown, russet or light-cinnamon in herbarium specimens, at first with a

few, white, floccose fibers or scales on the margin, soon glabrous, hygrophanous or subviscid when moist, even or faintly striate on the margin; context white or somewhat colored, with no odor and a mild taste; lamellae usually decurrent, medium-close or slightly distant, 4–6 mm. broad, clay-colored to rusty-brown, the edges white-crenulate in fresh plants; veil forming a median or superior membranous, broad, conspicuous, often striate, persistent annulus; stipe central, equal or enlarged below, whitish or brownish, often dark below, stuffed or hollow, 4–8 cm. long, 4–15 mm. thick; spores cylindric-elliptic or fusoid-elliptic, smooth, 11–15 × 5–7 μ; cystidia abundant, conspicuous, projecting 20–40 μ, flask-shaped.

TYPE LOCALITY: Europe.
HABITAT: In grassy places in woods or wooded pastures.
DISTRIBUTION: New York and westward to Washington; also in Europe.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 103, f. 2;* Trans. Wisc. Acad. **17**: *pl. 31.*

4. **Pholiota vermiflua** (Peck) Sacc. Syll. Fung. **5**: 739. 1887.

Agaricus vermifluus Peck, Ann. Rep. N. Y. State Mus. **31**: 34. 1879.

Pileus 2–12 cm. broad, hemispheric to campanulate or plane, white, cream-colored or massicot-yellow, retaining these colors in drying, dry or moist or in wet weather almost viscid, glabrous or fibrillose on the margin from the veil, at maturity often becoming reticulate-areolate at the center; context rather thick, often with a slightly disagreeable taste, pure-white; lamellae slightly uncinate to broadly adnate or sinuate, close, 3–10 mm. broad, white, then dark-brown, ochraceous-tawny to buckthorn-brown in dried plants; veil white, membranous, forming a superior, often evanescent annulus, or adhering to the margin of the pileus; stipe central, equal or more often enlarged at the apex and tapering to a somewhat bulbous base, white or light-brown, fibrillose or glabrous, sometimes striate and pruinose at the apex, solid or with a small hollow, 5–12 cm. long, 3–15 mm. thick; spores ovoid or elliptic, more or less truncate at the apex, smooth, 10–14 × 6–8 μ; cystidia present, subglobose to pyriform with a tapering base, 35–45 × 20 μ, not prominent, sometimes quite rare.

TYPE LOCALITY: Ticonderoga, New York.
HABITAT: On the ground in cultivated, grassy, or waste places; not in dense woods.
DISTRIBUTION: New York to North Carolina and westward to the Pacific coast.
ILLUSTRATIONS: Trans. Wisc. Acad. 17: *pl. 28, f. C–F, 29;* **18**: *pl. 11–13.*

5. **Pholiota Howeana** Peck, Bull. N. Y. State Mus. 122: 147. 1908.

Agaricus Howeanus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 53. 1873.

Pileus 2.5–8 cm. broad, convex then plane, subumbonate, yellowish or yellowish-brown, sometimes lighter and slightly rugulose when mature, sometimes darker in the center, dry, even, glabrous, even on the margin; context fragile, fleshy, with a bitter taste; lamellae sinuate-adnate or with a decurrent tooth when young, often entirely separating and leaving a distinct trace on the stipe, whitish, becoming ferruginous-brown, rather close, eroded, the edges lighter-colored; veil forming a conspicuous, persistent, superior annulus; stipe central, equal or slightly thickened at the base, colored similar to the pileus, glabrous or white-tomentose at the base, hollow, 5–11 cm. long, 4–7 mm. thick, sometimes with white mycelial cords at the base; spores ovoid or ovoid-elliptic, truncate at the apex, smooth, dilute-brown, 8–10 × 4.5–5.5 μ; cystidia present but quite rare, broadly flask-shaped, projecting, hyaline.

TYPE LOCALITY: Center, New York.
HABITAT: On the ground in open woods and bushy places, often among grass.
DISTRIBUTION: New York and perhaps Michigan.

6. **Pholiota candicans** (Schaeff.) Schroet. Krypt.-Fl. Schles. **3**[1]: 608. 1889.

Agaricus candicans Schaeff. Fung. Bavar. **4**: Ind. 50. 1774.
Agaricus praecox Pers. Comm. Fung. Bavar. 89. 1800.
Pholiota praecox Quél. Champ. Jura Vosg. 91. 1872.

Pileus 2–14 cm. broad, convex to campanulate or nearly plane, sometimes umbonate, often fuscous or fuscous-black when very young, soon whitish, often tinged with yellow or tan, or brownish at the center, usually ochraceous or tan in herbarium specimens, soft, glabrous, or at times as though finely tomentose, dry, areolate in dry weather or in large specimens; context white, with a strongly farinaceous odor; lamellae sinuate-adnate to broadly adnate, or with a

very slight decurrent tooth, medium-close, whitish, becoming brown or rusty-brown, honey-yellow to clay-colored or snuff-brown in herbarium specimens, 3–12 mm. broad; veil membranous, forming a white, superior, persistent or evanescent annulus, or partially adhering to the margin of the pileus; stipe central, equal or somewhat bulbous below, whitish, pruinose-mealy to slightly fibrillose, squamose, furfuraceous, or becoming nearly glabrous, often striate above the annulus, stuffed or hollow, 3–15 cm. long, 3–20 mm. thick; spores ovoid, usually with a truncate apex, smooth, deep-brown, 8.5–10 × 4.5–6 μ; cystidia present, flask-shaped or ventricose, sometimes rare, projecting somewhat, 14–18 μ in diameter.

TYPE LOCALITY: Europe.

HABITAT: On grassy ground, in lawns, fields, etc.; sometimes on the ground in open woods or in straw or other litter carried into woods.

DISTRIBUTION: Massachusetts to North Carolina, and westward to the Pacific coast; also in Europe.

ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **49**: *pl. 46;* Atk. Stud. Am. Fungi *pl. 42;* ed. 2. *pl. 46;* Berk. Outl. Brit. Fungol. *pl. 8, f. 1;* Bres. Fung. Mang. *pl. 49;* Cooke, Brit. Fungi *pl. 360 (381);* Gill. Champ. Fr. *pl. 292 (526);* Hard, Mushr. *f. 209;* C. H. Kauffman, Agar. Mich. *pl. 59;* Mem. N. Y. State Mus. **3**: *pl. 57;* Mycologia **3**: *pl. 49, f. 1;* Pat. Tab. Fung. *f. 112;* Quél. Champ. Jura Vosg. **1**: *pl. 7;* Schaeff. Fung. Bavar. *pl. 217;* Trans. Wisc. Acad. **17**: *pl. 27, 28, f. A, B.*

7. **Pholiota temnophylla** (Peck) Sacc. Syll. Fung. **5**: 740. 1887.

Agaricus temnophyllus Peck, Ann. Rep. N. Y. State Cab. **23**: 90. 1872.

Pileus 2.5–5 cm. broad, hemispheric becoming convex, ochraceous-yellow, cinnamon-buff to ochraceous-tawny in dried plants, smooth, glabrous, dry; lamellae obliquely sinuate-adnate, medium-close, 4–8 mm. broad, brownish-ferruginous; veil membranous, white, forming a distinct, superior, persistent annulus; stipe central, equal, white, glabrous, hollow, 5–10 cm. long, 4–8 mm. thick; spores elliptic to ovoid, usually slightly truncate at one end, smooth, 9–10.5 × 6–7 μ; cystidia present but rather rare, flask-shaped or fusoid, hyaline, 17–21 μ in diameter, projecting prominently.

TYPE LOCALITY: Sandlake, New York.

HABITAT: Grassy ground by roadside.

DISTRIBUTION: Known only from the type locality, except as reported by Harper from Illinois.

ILLUSTRATION: Trans. Wisc. Acad. Sci. **17**: *pl. 33, f. A.*

8. **Pholiota rugosa** Peck, Ann. Rep. N. Y. State Mus. **50**: 102. 1897.

Pileus 8–25 mm. broad, broadly conic or campanulate to convex or plane, sometimes umbonate, yellowish-red or dark-ferruginous, cinnamon or tawny in herbarium specimens, hygrophanous, glabrous, slightly rugose at the center, striate on the margin, often upturned with age; context very thin, concolorous, without a characteristic odor or taste; lamellae at first adnate, becoming adnexed or free with age, medium-close, the edges usually minutely denticulate, 1–3 mm. broad, yellowish-white, becoming ferruginous or brownish-ferruginous, amber-brown in dried plants; veil forming a white, persistent, membranous, median annulus, striate on the upper side; stipe central, equal or tapering upward, yellowish above, brownish or blackish-brown below, finely floccose below the annulus, pruinose or mealy above, hollow, 1–2 cm. long, 1.5–4 mm. thick; spores elongate-elliptic, slightly truncate at one end, smooth, 8–11 × 4–5 μ; cystidia none.

TYPE LOCALITY: Adirondack Mountains, New York.

HABITAT: On the ground in open woods; also in greenhouses.

DISTRIBUTION: New York, Pennsylvania, and Michigan.

9. **Pholiota blattaria** (Fries) Gill. Champ. Fr. 433. 1876.

Agaricus blattarius Fries, Syst. Myc. **1**: 246. 1821.

Pileus 1–4 cm. broad, convex to plane, obtuse or more often somewhat umbonate, clay-colored to ferruginous or hazel, ochraceous or cinnamon-buff on drying, hygrophanous, glabrous, striate or striatulate on the margin when moist, often becoming somewhat rugose on parting with the moisture; context concolorous, with no odor and a mild taste; lamellae rounded behind, soon becoming free, 2–4 mm. broad, close, ventricose, clay-colored to cinnamon; veil forming a subpersistent superior or median annulus, often striate on the upper side; stipe central, equal or tapering upward, covered with small white fibrils either entirely or only at the base, whitish

or slightly brownish, hollow, 2.5–5 cm. long, 2–4 mm. thick; spores ovoid or narrow-ovoid, sometimes with a slightly truncate apex, 6.5–9 × 4–5 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On the ground in wooded or grassy places.
DISTRIBUTION: New York, Ohio, and Missouri; also in Europe.

10. **Pholiota togularis** (Bull.) Quél. Champ. Jura Vosg. 92. 1872.

Agaricus togularis Bull. Herb. Fr. *pl. 595, f. 2.* 1793.

Piłeus 1–4 cm. broad, campanulate or convex becoming nearly plane, watery-brown when fresh, hygrophanous, becoming ochraceous on drying, warm-buff or ochraceous-buff in dried specimens, striatulate on the margin when moist, glabrous, even or perhaps rugose at times; lamellae sinuate and narrowly attached, medium-close or subdistant, yellow becoming pale-ferruginous, often ochraceous-buff in dried specimens; veil forming a conspicuous, persistent, median annulus, striate on the upper side; stipe central, equal, yellow at the top and brownish at the base or entirely brownish, slightly fibrillose, hollow, 2.5–10 cm. long, 2–5 mm. thick; spores narrow-ovoid or ovoid, truncate at the apex, smooth, 9–10.5 × 4–6 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods or pastures.
DISTRIBUTION: Massachusetts, Virginia, and Michigan; also in Europe.
ILLUSTRATIONS: Bull. Champ. Fr. *pl. 595, f. 2;* Boud. Ic. Myc. *pl. 101;* Cooke, Brit. Fungi *pl. 350 (379);* Gill. Champ. Fr. *pl. 289 (530);* Trans. Wisc. Acad. **17**; *pl. 59* (as *P. blattaria*).

11. **Pholiota filaris** (Fries) Peck, Bull. N. Y. State Mus. 122: 144. 1908.

Agaricus togularis filaris Fries, Ic. Hymen. **2**: 2. 1877.

Pileus 0.5–2 cm. broad, camanulate or convex to plane, ochraceous when fresh, tawny or cinnamon-rufous in dried plants, glabrous, dry, striate on the margin, the striae visible in dried plants; context very thin; lamellae adnate, medium-close, yellow becoming pale-ferruginous, tawny or cinnamon-rufous in dried plants, 1–2 mm. broad; veil forming a distinct, persistent, median or superior though distant annulus, striate on the upper side; stipe central, equal, glabrous or slightly fibrillose, pallid to brown, hollow, 2–5 cm. long, 1–2 mm. thick; spores elongate-ellipsoid or elongate-elliptic, often inequilateral, truncate at the apex, smooth, brown, 9–10.5 × 4.5–5.5 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods or pastures.
DISTRIBUTION: New York and Washington; also in Europe.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 104, f. 4* (as *Agaricus togularis*).

12. **Pholiota minima** Peck, Ann. Rep. N. Y. State Mus. **41**: 65. 1888.

Pileus 3–8 mm. broad, hemispheric or campanulate, umbonate, brown when moist, pale-buff or yellowish-white when dry, brown in herbarium specimens, hygrophanous, glabrous, striatulate on the margin when moist; lamellae adnexed, subdistant, ferruginous, cinnamon in dried plants, 1–2 mm. broad; veil forming an evanescent medium or superior annulus; stipe central, equal, concolorous with the pileus, shining, glabrous, solid, 1–2.5 cm. long, 1–2 mm. thick; spores ovoid or elliptic, minutely asperulate, 6–8.5 × 3.5–4.5 μ; cystidia none.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: Among hair-cap mosses.
DISTRIBUTION: New York and Alabama.

13. **Pholiota mycenoides** (Fries) Gill. Champ. Fr. 432. 1876.

Agaricus mycenoides Fries, Syst. Myc. **1**: 246. 1821.

Pileus 0.5–2 cm. broad, at first convex, at maturity plane, rather thin and membranous, rusty-brown when moist, buckthorn-brown to ochraceous-tawny in herbarium specimens, hygrophanous, drying first at the center and becoming ochraceous to deep-cream-colored, glabrous, widely striate on the margin and sometimes white-fibrillose from the cobwebby veil; context concolorous, with no odor and a mild or subfarinaceous taste; lamellae adnate or somewhat sinuate, and becoming nearly free, sometimes uncinate, medium-close or slightly distant,

rusty-brown, 2–3 mm. broad; veil forming a conspicuous, nearly median, membranous annulus, often striate on the upper side; stipe central, equal or tapering upward, slender, pallid to brown, glabrous or nearly so, hollow, 4–10 cm. long, 1–3 mm. thick; spores ovoid or broadly ovoid, truncate at the apex, smooth, 9–11.5 × 6–7.5 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: Among mosses, especially *Sphagnum*, in swampy places.
DISTRIBUTION: Massachusetts and perhaps Michigan; also in Europe.
ILLUSTRATIONS: Boud. Ic. Myc. *pl. 1, 2;* Cooke, Brit. Fungi *pl. 503 (405) B.*

14. **Pholiota McMurphyii** Murrill, Mycologia 4: 260. 1912.

Pileus 4–8 cm. broad, convex to nearly plane, rather thick and fleshy, greenish-yellow at the margin, orange-cinnamon at the center, ochraceous-orange to tawny when dry, slimy-viscid, glabrous; context white, with no characteristic taste or odor; lamellae adnate or slightly sinuate, close, soon brownish, 4–8 mm. broad; veil forming an inconspicuous, fibrillose, superior, torn annulus; stipe central, equal, yellowish-white, solid, below the annulus rough with several conspicuous ridges, 4–6 cm. long, 1–2 cm. thick; spores ovoid or elliptic, quite rough, 13–17 (–21) × 7–7.5 (–10) μ; cystidia none.

TYPE LOCALITY: Searsville Lake, California.
HABITAT: On the ground among leaves in oak woods.
DISTRIBUTION: Known only from the type locality.

15. **Pholiota albivelata** Murrill, Mycologia 4: 260. 1912.

Pileus 2–6 cm. broad, convex to plane, sometimes somewhat umbonate, isabelline tinted with rose, resembling the color of some species of *Gomphidius*, the umbo slightly darker, honey-yellow to light-clay-colored in herbarium specimens, slimy-viscid, glabrous; lamellae adnate or slightly sinuate, ventricose, medium-close or slightly subdistant, becoming fulvous, the edges white-crenate; veil forming a large erect or pendent, superior or median, persistent annulus, pure-white on the lower side, brown on the upper side from the spores and striate from the lamellae; stipe central, equal, usually heavily white-floccose just below the annulus, pruinose or slightly floccose above, becoming subglabrous and rarely yellowish toward the base, solid or hollow, 5–8 cm. long, 4–10 mm. thick; spores ovoid to narrow-ellipsoid, smooth, slightly apiculate at one end, 8–10 × 4.5–5.5 μ; cystidia abundant, not projecting conspicuously, small, hyaline with a rounded conspicuous dark-staining body at the apex, sometimes pointed, but more often obtuse, 30–35 × 7.5–9 μ.

TYPE LOCALITY: Seattle, Washington.
HABITAT: On the ground in woods.
DISTRIBUTION: Washington and Oregon.

16. **Pholiota trachyspora** Clements, Crypt. Form. Colo. *373*. 1907.

Pileus 2.5–6 cm. broad, convex or plane, deep-golden- or coffee-brown to dark-melleous, entirely covered with floccose fibrils of the same color matted or collected into squamules, particularly at the center of the pileus, dry; lamellae adnate to adnexed, deep-brown, medium-close, 3–6 mm. broad; veil forming a persistent or evanescent, superior annulus; stipe central, equal, fibrillose, umber-brown, 4–8 cm. long, 4–10 mm. thick; spores broadly ovoid or subglobose, dark under the microscope, decidedly rough-walled, 7–9 × 5–6 μ; cystidia none.

TYPE LOCALITY: Sugar Loaf Park, Colorado.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

17. **Pholiota anomala** Peck, Bull. Torrey Club 22: 202. 1895.

Pileus 1.5–2.5 cm. broad, at first hemispheric or subconic, then convex, broccoli-brown when moist, pale-yellow or cream-colored when dry, warm-buff in dried plants, hygrophanous, glabrous; lamellae adnate or decurrent, medium-close or slightly distant, 3–4 mm. broad, pale becoming brownish-ferruginous, ochraceous-orange to cinnamon in dried plants; veil forming a slight, finally evanescent annulus; stipe central, equal, fibrillose or glabrous, whitish or brownish, hollow with irregular transverse partitions or these filled with a cottony tomentum, 3–6 cm. long, 2–6 mm. thick; spores oblong-ellipsoid, smooth, very dilutely colored, 7.5–10 × 4–5 μ;

cystidia present, inconspicuous, or so rare as to pass unnoticed, clavate and attenuate sometimes to a long whip-like point that projects 10–15 μ beyond the basidia, 40–50 × 5–7 μ.

TYPE LOCALITY: Pasadena, California.
HABITAT: On sticks and leaves on the ground.
DISTRIBUTION: Known only from the type locality.

18. **Pholiota duroides** Peck, Bull. N. Y. State Mus. 122: 148. 1908.

Pileus 3.5–9 cm. broad, convex becoming nearly plane, dry or moist but not hygrophanous, creamy-white to ochraceous-buff, chamois, or cinnamon-buff or nearly ochraceous-orange, retaining these colors on drying, glabrous or slightly appressed-squamose or with spot-like scales or depressions in the center, even on the margin; context white, with a mild taste; lamellae adnexed or sinuate-adnate, sometimes with a decurrent tooth, close, narrow, 2–5 mm. broad, whitish becoming brown or rusty-brown, with white-crenulate edges, cinnamon-buff or snuff-brown when mature; veil forming a superior, white, membranous, pendent or rolled, subpersistent annulus, often striate on the upper side; stipe central, equal or enlarged below, glabrous, or at times fibrillose-scaly below, whitish, stuffed or hollow, 3–10 cm. long, 4–15 mm. thick; spores ellipsoid or ovoid, smooth, 4–6 × 3–4.5 μ; cystidia present, inconspicuous, pointed, scarcely projecting, 8.5–10 μ in diameter.

TYPE LOCALITY: Syracuse, New York.
HABITAT: On the ground in waste places, especially in open woods.
DISTRIBUTION: Massachusetts and New York to Virginia and Tennessee.

19. **Pholiota Johnsoniana** (Peck) Atk. Stud. Am. Fungi 153. 1900.

Agaricus Johnsonianus Peck, Ann. Rep. N. Y. State Cab. **23**: 98. 1872.
Stropharia Johnsoniana Peck, Ann. Rep. N. Y. State Mus. **41**: 84. 1888.

Pileus 3–10 cm. broad, convex or nearly plane, usually thick at the center and thin on the margin, yellowish or ochraceous, or yellow in the center and white on the margin, more or less cinnamon-buff in dried specimens, glabrous or at times with small appressed squamules in the center, dry, thin and sometimes striatulate on the margin; context white, with agreeable taste; lamellae adnate or sinuate-adnate, close, 2–5 mm. broad, whitish then rusty-brown, snuff-brown to bister in dried specimens; veil forming a thick, white, persistent, cottony roll on the stipe; stipe central, equal, glabrous, light-colored, solid, slightly striate at the top, 7–10 cm. long, 0.8–1.5 cm. thick; spores ovoid or ellipsoid, smooth, 5–8.5 × 3–4 μ; cystidia scarcely noteworthy in some plants and quite conspicuous in others, some imbedded and blunt, others projecting and usually pointed.

TYPE LOCALITY: Knowersville, New York.
HABITAT: On grassy ground in pastures or in leaf mold in woods in late summer.
DISTRIBUTION: Connecticut to North Carolina and westward to Michigan.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 44;* ed. 2. *pl. 49;* Ann. Rep. N. Y. State Cab. **23**: *pl. 3, f. 4–6;* Mycologia **7**: *pl. 163, f. 10.*

20. **Pholiota terrestris** Overholts, sp. nov.

Pileus 1–3 cm. broad, convex, uniform sayal-brown to cinnamon-brown in dried plants, dry, squamulose with appressed dark-colored, fibrillose scales, or fibrillose only on the margin; lamellae adnate or slightly decurrent, medium-close, 2–4 mm. broad, bright-cinnamon; veil ample, membranous, not forming a distinct annulus but sometimes adhering considerably to the margin of the pileus; stipe central, equal, pallid above, brown below, floccose at the apex, distinctly scaly below the sheathing veil-remnants on the stipe, 3–6 cm. long, 2–5 mm. thick; spores oblong-ellipsoid, smooth, 5.5–6.5 × 3.5–4.5 μ; cystidia of several inconspicuous types, none projecting strongly, some brown or with a brown mass within.

Type collected on a lawn at Corvallis, Oregon, November 11, 1915, *H. C. Gilbert* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

21. **Pholiota erinaceella** Peck, Bull. N. Y. State Mus. 122: 152. 1908.

Agaricus detersibilis Peck, Ann. Rep. N. Y. State Mus. **28**: 49. 1876. Not *A. detersibilis* Berk. & Curt. 1853.
Agaricus erinaceellus Peck, Ann. Rep. N. Y. State Mus. **30**: 70. 1878.

Pileus 0.5–2.5 cm. broad, hemispheric, then convex or nearly plane, tawny-brown, not changing color in drying, dry, densely covered with minute erect pyramidal, spine-like, or granular tawny scales; lamellae adnexed or adnate, medium-close, or subdistant when young, 1–2 mm. broad, pallid then cinnamon-brown; veil forming a slight, superior, floccose, evanescent annulus; stipe central, equal, tawny, with crowded, erect, floccose scales or granules below the annulus, smooth above, stuffed or hollow, 1.5–2.5 cm. long, 1–1.5 mm. thick; spores ellipsoid or naviculoid, smooth, very dilute-brown under the microscope, 7–8 × 4–5 μ; cystidia none on the sides but protruding abundantly from the edges of the lamellae.

TYPE LOCALITY: Lake Pleasant, New York.
HABITAT: On dead wood of deciduous trees.
DISTRIBUTION: New York, Michigan, and Missouri.
ILLUSTRATION: Trans. Wisc. Acad. **17**: *pl. 51*.

22. **Pholiota muricata** (Fries) Quél. Champ. Jura Vosg. 231. 1872.

Agaricus muricatus Fries, Obs. Myc. **2**: 12. 1818.

Pileus 1–3 cm. broad, convex to plane, obtuse or often slightly umbilicate-depressed, golden-brown or tawny-yellowish when fresh, brown or cinnamon-brown in dried plants, covered with a dense cuticle of short tawny fibrils or fibrillose-tufted scales, or granulose-squarrose at the center, dry; context thin, yellowish, with a mild odor and no taste; lamellae sinuate-adnate, often nearly free in aging, medium-close or slightly distant, light-yellow then cinnamon-brown or rusty-brown, the edges white-crenate, 3–4 mm. broad; veil forming an indistinct, superior, evanescent annulus; stipe central, equal, yellowish but with few, rusty-brown, fibrillose, suberect scales or becoming nearly glabrous, stuffed then hollow, 3–7 cm. long, 2–5 mm. thick, sometimes with a bright-yellow mycelium at the base; spores ellipsoid, smooth, 6–8 × 3.5–4 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On rotting logs of deciduous trees.
DISTRIBUTION: Michigan and Illinois; also in Europe.
ILLUSTRATION: Trans. Wisc. Acad. **17**: *pl. 52, 53*.

23. **Pholiota curvipes** (Fries) Quél. Champ. Jura Vosg. 230. 1872.

Agaricus curvipes Fries, Epicr. Myc. 168. 1838.

Pileus 2–5 cm. broad, convex to plane, ochraceous-orange, more tawny with age and in herbarium specimens, at first innately floccose or silky-floccose, on aging breaking up into small fibrillose scales, even, dry, even on the margin; context yellow, thin, with no odor and a mild taste; lamellae adnate, medium-close to slightly distant, bright-ochraceous-orange when mature and in dried specimens, the edges white, conspicuously floccose-crenate, 3–6 mm. broad; veil forming a superior, soon evanescent, radiate-floccose annulus, or annulus none; stipe central, equal or tapering upward, ochraceous-orange or ochraceous-tawny, clear-yellow at the apex, decidedly floccose-fibrillose, hollow, 2.5 cm. long, 2–5 mm. thick; spores ellipsoid or oblong-ellipsoid, smooth, 7–8.5 × 4–5 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On dead wood of deciduous trees.
DISTRIBUTION: Maine, New York, and Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 370 (398) B;* Fries, Ic. Hymen. *pl. 104, f. 3*.

24. **Pholiota aeruginosa** Peck, Ann. Rep. N. Y. State Mus. **43**: 81 (35). 1890.

Flammula viridans Murrill, Mycologia **4**: 262. 1912.

Pileus 2–10 cm. broad, convex, greenish becoming tinged with yellow or brown, drab to cinnamon or ochraceous-buff in dried specimens, dry, at first glabrous, usually soon more or less areolate with each areola surmounted by one to three fibrillose scales, or sometimes completely squamulose without areolae; context with a green tinge, yellowish in dried plants;

lamellae adnate or sinuate-adnate, easily separating, 3–7 mm. broad, pale-ochraceous when young, becoming ochraceous-orange or apricot-buff on drying; veil leaving only a slight lacerated annulus or entirely evanescent; stipe central or excentric, equal or nearly so, glabrous or slightly fibrillose, sometimes sulcate-striate, colored like the pileus, solid, 3–8 cm. long, 4–10 mm. thick; spores ellipsoid or elliptic, slightly echinulate when mature, 6–7.5 × 3.5–4.5 μ; cystidia none.

TYPE LOCALITY: Trexlertown, Pennsylvania.
HABITAT: On decaying wood, probably mostly of coniferous trees.
DISTRIBUTION: New York and Pennsylvania, and westward to Arkansas, Idaho, and Washington.

25. **Pholiota luteofolia** (Peck) Sacc. Syll. Fung. 5: 756. 1887.

Agaricus luteofolius Peck, Ann. Rep. N. Y. State Mus. 27: 94. 1875.

Pileus 2–6 cm. broad, convex, very young specimens dark-red or reddish-brown, becoming pinkish-red or yellowish-red when mature, ochraceous-buff or ochraceous-tawny in dried plants, dry, appressed-fibrillose-squamulose and sometimes areolate in the center, fibrillose on the margin; context fleshy, thin, typically lavender in fresh plants, bitter; lamellae adnate or uncinate, sometimes becoming sinuate-adnate, medium-close or somewhat distant, 3–8 mm. broad, yellow becoming bright-ferruginous, mostly ochraceous-buff or ochraceous-orange in dried specimens; veil forming a slight, fugacious, spore-stained annulus; stipe central or somewhat excentric, equal or enlarged downward, concolorous with the pileus, fibrillose, solid, 3–9 cm. long, 3–10 mm. thick; spores ellipsoid to elliptic, slightly rough, 6–9.5 × 3.5–4.5 μ; cystidia none or not noteworthy.

TYPE LOCALITY: Forestburgh, New York.
HABITAT: Dead wood of deciduous trees.
DISTRIBUTION: New York, Ohio, Illinois, and Missouri.
ILLUSTRATION: Trans. Wisc. Acad. 17: *pl. 48*.

26. **Pholiota cerasina** (Peck) Sacc. Syll. Fung. 5: 744. 1887.

Agaricus cerasinus Peck, Bull. Buffalo Soc. Nat. Sci. 1: 50. 1873.

Plants cespitose, 5–12 cm. broad, convex to plane, cinnamon-colored to tawny, perhaps lighter at times, somewhat hygrophanous, glabrous or nearly so, even on the margin; context fleshy, rather thin, with a bitter taste and an amygdaline odor that is best noticed in young plants; lamellae medium-close or slightly distant, sinuate to adnate or slightly decurrent, yellow, becoming cinnamon or ferruginous, finally pruinose from the spores, 5–12 mm. broad; veil present, forming an early evanescent spore-stained annulus; stipe central or more often excentric, equal or enlarged below, concolorous with the pileus, fibrillose at least at the apex, solid or stuffed, 5–15 cm. long, 5–12 mm. thick; spores elliptic to ovoid, slightly roughened, brown, 6–9 × 4.5–5.5 μ; cystidia none.

TYPE LOCALITY: Sterling, New York.
HABITAT: On dead wood of deciduous trees.
DISTRIBUTION: Maine, Vermont, and New York.

27. **Pholiota spectabilis** (Weinm.) Gill. Champ. Fr. 443. 1876.

Agaricus spectabilis Weinm.; Fries, Elench. Fung. 1: 28. 1828.
Pholiota lutea Peck, Ann. Rep. N. Y. State Mus. 51: 288. 1898.
Pholiota ventricosa Earle, Bull. N. Y. Bot. Gard. 2: 341. 1902.

Pileus 4–15 cm. broad, convex becoming nearly plane, buff-yellow to apricot-orange or zinc-orange, becoming at times slightly more brownish (tawny) in dried plants, dry or moist, finely silky, or in some very young plants practically glabrous at times, to distinctly fibrillose or rivulose or in mature plants squamulose, even on the margin; context yellow, with a bitter or amygdaline taste; lamellae adnexed to adnate or with decurrent teeth or lines, medium-close, 3–8 mm. broad, yellow becoming ferruginous, yellow-ochre to ochraceous-orange or tawny in dried specimens; veil forming a distinct, superior or apical, spore-stained, persistent or subpersistent annulus, sometimes striate on the upper side; stipe central or nearly so, nearly equal to decidedly ventricose or bulbous at the base, yellow or tawny, yellow and floccose above the annulus, fibrillose or furfuraceous below, 3–15 cm. long, 0.5–3 cm thick, solid; spores elliptic, rough, 7.5–9 × 4.5–6 μ; cystidia none

TYPE LOCALITY: Europe.
HABITAT: On stumps and trunks of deciduous or rarely coniferous trees, or growing from buried wood.
DISTRIBUTION: Ontario to Alabama, and westward to the Pacific coast; also in Europe.
ILLUSTRATIONS: G. Bernard, Champ. Rochelle *pl. 55, f. 1.* Cooke, Brit. Fungi *pl. 352 (394);* Fries, Ic. Hymen. *pl. 102;* Gill. Champ. Fr. *pl. 299 (529);* Trans. Wisc. Acad. **17**: *pl. 44, 50;* C. H. Kauffman, Agar. Mich. *pl. 61;* Mycologia **1**: *pl. 7, f. 4.*

28. **Pholiota Schraderi** (Peck) Overholts.

Stropharia Schraderi Peck, Bull. Torrey Club **32**: 80. 1905.

Pileus 5–8 cm. broad, convex or nearly plane, pallid when young, ochraceous-buff when mature, dry, fibrillose, squamulose, or rimose-squamulose on the disk; context white, with a taste of radishes; lamellae adnate, close, thin, whitish then brown; veil forming a small, lacerate, white, sometimes evanescent annulus; stipe central, subequal, squamulose and concolorous with the pileus below, white and mealy above, solid, 2–4 cm. long, 8–12 mm. thick; spores ovoid, not apiculate, smooth, 6–8 (–9) × 4–6 μ; cystidia rather abundant, hyaline, fusoid, projecting rather prominently; also irregular organs as though post-mature basidia imbedded in the hymenium.

TYPE LOCALITY: Washington, District of Columbia.
HABITAT: In sandy soil about stumps.
DISTRIBUTION: Known only from the type locality.

29. **Pholiota rigidipes** Peck, Bull. N. Y. State Mus. 157: 31. 1912.

Pileus 4–8 cm. broad, broadly convex, sometimes slightly or broadly umbonate, pale-yellow or buff, buff-yellow to ochraceous-buff or ochraceous-orange in dried plants, squamulose with scattered, appressed, slightly darker-colored, fibrillose scales, more prominent in the center though never conspicuous and partially disappearing in mature plants; context white, tinged yellow next to the lamellae, distinctly yellow in dried plants, with a mild taste; lamellae sinuate-adnate or adnate, medium-close, 3–7 mm. broad, cinnamon or ochraceous-tawny and retaining these colors in drying; veil forming a slight, often evanescent annulus; stipe central, equal, pallid or yellowish and fibrillose-squamulose or becoming nearly glabrous below the annulus, white and pruinose at the apex, stuffed or hollow, 5–9 cm. long, 4-6 mm. thick; spores oblong or oblong-ellipsoid, smooth, 6.5–8.5 × 3.5–4.5 μ; cystidia present, not always abundant, brown, some projecting, 25–40 × 6–8 μ.

TYPE LOCALITY: Constableville, New York.
HABITAT: On the ground in woods, probably always on buried or exposed wood.
DISTRIBUTION: New York, New Jersey, and Missouri.

30. **Pholiota oregonensis** Murrill, Mycologia **4**: 262. 1912.

Hypodendrum oregonense Murrill, Mycologia **4**: 261. 1912.

Pileus apparently 5 cm. or broader when mature, convex, obtuse, thick and fleshy, dry, smooth, glabrous, ochraceous-buff to ochraceous-tawny and retaining these colors when dried, strongly incurved on the margin; context thin, cremeous, with an agreeable nutty or amygdaline taste in dried plants; lamellae adnate, medium-distant to distant, yellow or yellowish-brown, becoming darker, strongly interveined, the edges irregular; veil forming a superior, or nearly apical, irregular, yellowish-white annulus; stipe central or excentric, terete or compressed, equal or enlarged upward or downward, yellowish above, fulvous below, with small, scattered, unicolorous, subfloccose, evanescent scales pointing upward, solid, 6–10 cm. long, 8–20 mm. thick; spores ovoid or elliptic, smooth, 7.5–10 × 3–5 μ; cystidia none or not noteworthy.

TYPE LOCALITY: Glen Brook, Oregon.
HABITAT: On decayed spot in trunk of living willow.
DISTRIBUTION: Known only from the type locality.

31. **Pholiota mutabilis** (Schaeff.) Quél. Champ. Jura Vosg. 94. 1872.

Agaricus mutabilis Schaeff. Fung. Bavar. **4**: Ind. 6. 1774.

Pileus 1.5–3 cm. broad, convex to plane, cinnamon when moist, paler when dry, ochraceous-buff in dried plants, hygrophanous, glabrous; lamellae adnate or slightly decurrent, medium-

close, 2–4 mm. broad, pallid then cinnamon; veil forming a white or dark, superior, evanescent or persistent annulus; stipe central, equal, concolorous with the pileus, decidedly scaly below the ring, pruinose above, stuffed then hollow, 3–7 cm. long, 3–5 mm. thick; spores ovoid or elliptic, slightly truncate at one end, smooth, 6–7.5 × 4–5 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On stumps and logs.
DISTRIBUTION: Ohio and Colorado; also in Europe.
ILLUSTRATIONS: Batsch, Elench. Fung. Contin. *pl. 38, f. 208;* Bres. Funghi Mang. *pl. 51;* Cooke, Brit. Fungi *pl. 355 (402);* Fries, Sv. Aetl. Svamp. *pl. 47;* Lanzi, Funghi Mang. *pl. 76, f. 3;* Schaeff. Fung. Bavar. *pl. 9.*

32. **Pholiota confragosa** (Fries) Sacc. Syll. Fung. **5**: 758. 1887.

Agaricus confragosus Fries, Epicr. Myc. 169. 1838.

Pileus 1–2.5 cm. broad, convex to nearly plane, cinnamon-rufous when moist, tawny when dry, nearly uniform warm-buff or cinnamon-buff in dried plants, densely and finely floccose-squamulose or floccose-fibrillose under a lens, on aging becoming somewhat denuded at times but never entirely so, hygrophanous, striate on the margin when moist; context fleshy-fragile, pallid, with no marked odor or taste; lamellae adnate or slightly decurrent, sometimes white-crenulate on the edges, medium-close, 1–3 mm. broad, rufous to cinnamon-brown; veil forming a superior, membranous annulus, erect and subrigid for a time, finally more annulate and in rare cases all but disappearing; stipe central, equal or enlarged just at the base, concolorous with the pileus or paler, markedly fibrillose below the annulus and sometimes white-tomentose or strigose at the base, floccose and sometimes striate above, 2–5 cm. long, 1.5–5 mm. thick; spores ellipsoid or broadly ellipsoid, smooth, not truncate, dilutely colored under the microscope, 6–8 × 4–5 μ; cystidia none except for radiating tufts on the edges of the lamellae.

TYPE LOCALITY: Europe.
HABITAT: Rotten mossy trunks of deciduous trees.
DISTRIBUTION: New England, New York, and Michigan; also in Europe.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 105, f. 2;* Trans. Wisc. Acad. **17**: *pl. 41, f. D, E.*

33. **Pholiota furcata** Overholts, sp. nov.

Pileus 1–3 cm. broad, convex to plane, somewhat gibbous at times, reddish-brown when moist, ochraceous when dry, cinnamon-buff in dried plants, hygrophanous, glabrous, even on the margin and at first incurved; context concolorous, with no odor; lamellae slightly decurrent, close, ochraceous to dull-cinnamon, 2–3 mm. broad, conspicuously forked and connected by veins so as to appear somewhat porous; veil forming a superior, distinct but somewhat evanescent annulus; stipe central, equal, dark-watery-brown, floccose-pruinose above the annulus, white-fibrillose below, solid or spongy, 1.5–2.5 cm. long, 2–3 mm. thick; spores ovoid or éllipsoid, somewhat rough at maturity, 7.5–9.5 × 4.5–6 μ; cystidia present and fairly abundant, hyaline, flask-shaped, ending in a long projecting tip.

Type collected on old mossy logs in Van Cortlandt Park, New York, November 3, 1903, *F. S. Earle 1881* (herb. N. Y. Bot. Gard.).

34. **Pholiota marginella** Peck, Ann. Rep. N. Y. State Mus. **51**: 289. 1898.

Pileus 1–4 cm. broad, convex becoming nearly plane, buckthorn-brown or yellowish-red when young or moist, whitish or yellowish-buff when dry, warm-buff or cinnamon-buff in dried plants, hygrophanous or at times subviscid, glabrous, striatulate on the margin when young, and slightly silky with whitish fibrils; lamellae sinuate-adnexed or sinuate-uncinate, easily separating, medium-close, 1–4 mm. broad, minutely eroded on the edges, whitish becoming dark-ferruginous; veil forming a slight or well-developed fugacious annulus; stipe central, equal, fibrillose below, pruinose above the annulus, stuffed or hollow, whitish or pallid, sometimes with a white tomentum at the base, 3–10 cm. long, 1–6 mm. thick; spores ellipsoid or ovoid, smooth, slightly truncate at one end, brown, 6–8 (–9) × 3.5–4.5 μ; cystidia none.

TYPE LOCALITY: North Elba, New York.
HABITAT: Decaying wood or on sawdust piles.
DISTRIBUTION: New Hampshire to New Jersey, and westward to the Pacific coast.
ILLUSTRATION: Ann. Rep. N. Y. State Mus. **51**: *pl. B, f. 12–20.*

35. **Pholiota marginata** (Batsch) Quél. Champ. Jura Vosges 94. 1872.

Agaricus marginatus Batsch, Elench. Fung. 65. 1783.
Agaricus (*Naucoria*) *autumnalis* Peck, Ann. Rep. N. Y. State Cab. **23**: 92. 1872.
Naucoria autumnalis Sacc. Syll. Fung. **5**: 834. 1887.
Pholiota autumnalis Peck, Bull. N. Y. State Mus. 122: 156. 1908.

Pileus 1.5–7 cm. broad, convex to plane or slightly depressed, sometimes somewhat umbilicate, more rarely slightly umbonate, argus-brown, cinnamon-brown, or Sudan-brown when moist, warm-buff to ochraceous-orange when dry, usually of the latter colors in dried plants, hygrophanous, glabrous, usually striatulate on the margin when moist and often extending somewhat beyond the lamellae; context fleshy, thin, concolorous with pileus, with a farinaceous taste and odor; lamellae sinuate-adnate to adnate or slightly decurrent, medium-close to slightly distant, 2–7 mm. broad, light-yellowish-brown to buckthorn-brown; veil forming a fugacious or subpersistent annulus; stipe central, nearly equal or somewhat swollen just at the apex, fibrillose, pruinose at the apex and with a white tomentum at the base, concolorous or lighter than the pileus, hollow, 2–8 cm. long, 2–6 (–10) mm. thick; spores elliptic or ovoid, often smooth when young, with a rough wall when mature, 7–9.5 × 4.5–6 μ; cystidia present, but usually not abundant, flask-shaped with a long apex that projects 15–25 μ, hyaline, 50–80 × 10–15 μ.

TYPE LOCALITY: Europe.
HABITAT: On rotting wood, either exposed or buried, of either deciduous or coniferous trees; often on sawdust.
DISTRIBUTION: Massachusetts to Alabama and westward to Missouri and Minnesota; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 143;* ed. 2. *f. 147;* Cooke, Brit. Fungi *pl. 372 (403);* Hard, Mushr. *f. 215;* Trans. Wisc. Acad. **17**: *pl. 54, 55;* Ricken, Blätterp. Deutschl. *pl. 56, f. 7.*

36. **Pholiota discolor** (Peck) Sacc. Syll. Fung. **5**: 744. 1887.

Agaricus discolor Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 50. 1873.

Pileus 1–3 (–5) cm. broad, convex, then expanded or slightly depressed, cinnamon-rufous, bright-ochraceous-yellow when dry, cinnamon-buff, ochraceous-orange, or cinnamon in dried plants, hygrophanous, smooth, viscid, striatulate on the margin when moist, even when dry; lamellae adnate or with a decurrent tooth, medium-close or somewhat distant, 1–3 mm. broad, pallid then pale-ferruginous, mikado-brown or russet in dried plants; veil forming a subpersistent, distinct annulus; stipe central, equal, pallid, fibrillose-striate, hollow, 2.5–8 cm. long, 1.5–5 mm. thick; spores elliptic, rough-walled or smooth before maturity, dilute-brown under the microscope, 7–9 × 4–6 μ; cystidia present, projecting, flask-shaped, 40–70 × 10–12 μ.

TYPE LOCALITY: Greig, New York.
HABITAT: On old logs and on rotten wood.
DISTRIBUTION: New York to Alabama and westward to Michigan.
ILLUSTRATION: Trans. Wisc. Acad. **17**: *pl. 61, f. B.*

37. **Pholiota unicolor** (Vahl) Gill. Champ. Fr. 436. 1876.

Agaricus unicolor Vahl, Fl. Dan. 18: 7. 1792.

Pileus 0.5–2 cm. broad, campanulate to conic-campanulate or somewhat convex, often sharply umbonate, cinnamon-buff to ochraceous-buff or ochraceous-orange, herbarium specimens cinnamon to ochraceous-tawny, glabrous, hygrophanous, striate or fluted on the margin; context thin, with a somewhat farinaceous taste; lamellae squarely adnate, often becoming somewhat free with the expansion of the pileus, rather close, subtriangular in shape, more or less tawny or ferruginous; veil forming a persistent, median or superior, upright, funnel-shaped annulus; stipe central, equal, yellowish-brown, decidedly floccose-mealy above the annulus, fibrillose below or the base white-tomentose, hollow, 2.5–5 cm. long, 2–4 mm. thick; spores ovoid or elliptic, smooth or slightly rough when mature, 7.5–10 × 5–6 μ; cystidia rare, projecting, flask-shaped, hyaline, pointed.

TYPE LOCALITY: Europe.
HABITAT: On rotten wood of coniferous or deciduous trees.
DISTRIBUTION: Maine to Alabama; on the Pacific coast and in Mexico; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 530, f. 2;* Cooke, Brit. Fungi *pl. 356 (404) B;* Fl. Dan. *pl. 1071, f. 1.*

38. **Pholiota acericola** (Peck) Sacc. Fung. **5**: 759. 1887.

Agaricus acericola Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 50. 1873.

Pileus 2.5–7.5 cm. broad, broadly convex or nearly plane, rarely somewhat umbonate, cream-buff to clay-colored or buckthorn-brown when young and moist, buff-yellow or Naples-yellow when old, frequently somewhat darker at the center than at the margin, not strongly hygrophanous but changing color from young to old condition, clay-colored to tawny in herbarium specimens, glabrous, rugosely reticulated or corrugated, even at the margin and sometimes upturned; context thin, white, with a farinaceous taste and odor; lamellae sinuate-adnate or with a small decurrent tooth, medium-close, 2.5–7 mm. broad, grayish becoming brownish-ferruginous or at some stages with a purplish cast, the edges floccose-crenulate; veil forming a large persistent, or rarely evanescent, membranous, superior, or in some instances nearly median, deflexed, white annulus, sometimes of a rich-brown color and striate on the upper side; stipe central, equal or thickened at the base, fibrillose-striate to nearly glabrous, white or whitish, stuffed or hollow, typically with more or less of a white tomentum and strings of mycelium at the base, 6–11 cm. long, 4–15 mm. thick; spores ovoid or ovoid-elliptic, with a truncate apex, smooth, dull-brown, 8.5–10.5 × 5–6 μ; cystidia present but not abundant, flask-shaped or broadly fusoid but only the tips projecting so not conspicuous, the tips rarely two- to three-forked, 15–20 μ in diameter below.

TYPE LOCALITY: North Elba, New York.
HABITAT: Mossy rotted trunks of deciduous trees, perhaps also on coniferous wood; rarely on the ground around rotting logs or on leaf-mold.
DISTRIBUTION: Connecticut to North Carolina and Alabama, and westward to Ohio, Colorado, and California.

39. **Pholiota Aegerita** Briganti, Quél. Champ. Jura Vosg. 229. 1872.

Agaricus Aegerita Briganti, Funghi Litogr. Napol. *pl. 1.* 1824.

Pileus 3–13 cm. broad, subhemispheric to convex and then expanded, avellaneous to chamois, cinnamon in dried plants, dry, glabrous, rugulose on the margin when young; context white, firm; lamellae adnate or becoming nearly free, sometimes slightly decurrent in lines on the stipe, close or medium-close, 4–8 mm. broad, dark-brown; veil forming a median-superior, persistent, conspicuous annulus; stipe central, nearly equal, brownish, more or less white-fibrillose, solid, 4–15 cm. long, 4–10 mm. thick; spores ovoid or more often elongate-ovoid or elongate-elliptic, smooth, 9–11 × 4.5–6 μ; cystidia present but not conspicuous, projecting somewhat, hyaline, 6–10 μ in diameter, some pointed.

TYPE LOCALITY: Europe.
HABITAT: On recently felled trunks or from wounds in deciduous trees.
DISTRIBUTION: Michigan; also in Europe.
ILLUSTRATIONS: Bres. Funghi Mang. *pl. 50;* Cooke, Brit. Fungi *pl. 453* (*386*); Paulet & Lév. Ic. Champ. *pl. 145* (as *Hypodendrum populneum*).

40. **Pholiota destruens** (Brondeau) Gill. Champ. Fr. 442. 1876.

Agaricus destruens Brondeau, Pl. Crypt. Agen. *pl. 6.* 1828–30.
?*Agaricus heteroclitus* Fries, Obs. Myc. **2**: 223. 1818.
?*Agaricus comosus* Fries, Epicr. Myc. 165. 1838.

Pileus 6–15 cm. broad, heavy-fleshy, convex to expanded, sometimes umbonate, pallid or more often cervine or wood-brown, the cuticle sometimes weathering off to a white color, subviscid, with scattered, large, white, floccose patches or squamules that are rather adnate and sometimes imbricate and may disappear, frequently rivulose on the margin and with white fibrils or fibrillose scales; context white, thick, with no marked odor and a mild or saponaceous taste; lamellae adnate to sinuate, close or crowded, at first white, finally deep-cinnamon, 4–14 mm. broad; veil white, soon breaking, forming an evanescent, white, floccose-tomentose annulus; stipe central or excentric, equal or enlarged downward, white-floccose-tomentose above the annulus, with a few large white squamules or indistinctly and broadly peronate from the veil fibers, white to wood-brown, 5–15 cm. long, 1.5–6 cm. thick, solid; spores ovoid or ellipsoid, smooth, 7.5–9.5 × 4–5 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: On stumps and trunks of *Populus* and other deciduous trees.
DISTRIBUTION: New York and westward to the Pacific coast; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 84;* Hard, Mushr. *f. 214;* Kalchbr. Ic. Hymen. Hung. *pl. 13, f. 1* (as *P. comosa*); Trans. Wisc. Acad. **17**: *pl. 45–47*.

41. **Pholiota bryophila** Murrill, Mycologia 5: 33. 1913.

Pileus 0.5–2 cm. broad, plane or slightly depressed, isabelline, smooth, dry, glabrous, regular on the margin, appearing somewhat obtuse because of the broad lamellae; lamellae adnate, slightly distant, ventricose, 2–3 mm. broad, yellowish to brown; veil forming a white, conspicuous, persistent annulus, attached slightly above the middle of the stipe; stipe central, terete, equal, often curved, smooth, glabrous, subconcolorous, slender and rather tough, 2 cm. long, 1–2 mm. thick; spores ovoid to ellipsoid, rough, 8–9.5 × 5–6 μ; cystidia none.

TYPE LOCALITY: Orizaba, Mexico.
HABITAT: Among moss on a moist limestone cliff.
DISTRIBUTION: Known only from the type locality.

42. **Pholiota Brittoniae** Murrill, Mycologia 5: 35. 1913.

Pileus reaching 10 cm. broad, large and fleshy, cespitose, convex to expanded, becoming depressed at the center, fulvous, becoming fuliginous or blackish with age, dry, imbricate-fibrillose to subglabrous, entire, concolorous, and strongly inflexed on the margin on drying; lamellae sinuate with a decurrent tooth reaching as far as the annulus, seceding with age, broad, irregular in shape, subdistant, ferruginous, darker with age; veil forming an ample, membranous, ferruginous, persistent annulus fixed near the apex of the stipe; stipe enlarged below, concolorous, blackening with age, longitudinally furrowed, hollow, reaching 10 cm. long and 1–3 cm. thick; spores broadly ellipsoid to subglobose, roughened with an irregular sculpturing, ferruginous, 8–10 μ; cystidia none.

TYPE LOCALITY: Cinchona, Jamaica.
HABITAT: At the base of living or dead trees.
DISTRIBUTION: Known only from the type locality.

43. **Pholiota cubensis** Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 242. 1906.

Pileus 3–12 cm. broad, fleshy, firm, expanded, scattered or gregarious, dark-tan, "tawny" or "cinnamon brown" in herbarium specimens, dry, floccose-scaly on the disk, areolate but not striate on the margin; context yellowish, mild but somewhat unpleasant; lamellae sinuate with an adnate tooth, crowded, 3–7 mm. broad, dark-cinnamon; stipe central, terete, slightly enlarged at the base, floccose above, glabrous below, pale-yellow, solid, firm, 3–6 cm. long, 3–10 mm. thick; spores ovoid or ellipsoid, smooth, 6–7 × 3–4.5 μ; cystidia present, not conspicuous, projecting slightly.

TYPE LOCALITY: Santiago de las Vegas, Cuba.
HABITAT: On the ground under a building; also in open fields.
DISTRIBUTION: Cuba and Grenada.

44. **Pholiota martinicensis** Pat. in Duss, Énum. Champ. Guad. 54. 1903.

Pileus 8–15 mm. broad, convex to expanded, reddish-brown, darker at the center, with scattered erect reddish squamules; lamellae adnate, brown, unequal; veil forming a median, whitish, membranous, erect, persistent annulus; stipe central, slender, 2–3 cm. long, smooth above, furfuraceous-squamulose at the base; spores ovoid, smooth, 6 × 4 μ.

TYPE LOCALITY: Base of Mt. Pelée, Martinique.
HABITAT: Scattered or gregarious on dead bark of *Mangifera*, in woods.
DISTRIBUTION: Known only from the type locality.

45. **Pholiota cinchonensis** Murrill, Mycologia 5: 33. 1913.

Pileus 1.5 cm. broad, thin, becoming plane, ochroleucous to ochraceous, dry, granular-tomentose, striate, straight and even on the margin; lamellae adnate, with a decurrent tooth, isabelline, 1–2 mm. broad; veil forming a white, nearly central, sometimes ample annulus; stipe central, terete, equal, paler than the pileus, glabrous or nearly so, sometimes with fibrils on the lower part, attached at the base to a white mat of mycelium, 1.5 cm. long, 1 mm. thick; spores rather broadly ellipsoid, smooth, 7–8 × 4–5 μ; cystidia none.

TYPE LOCALITY: Cinchona, Jamaica.
HABITAT: On a dead stick in woods.
DISTRIBUTION: Known only from the type locality.

46. **Pholiota avellanea** Murrill, Mycologia 5: 32. 1913.

Pileus about 3 mm. broad and 3 mm. thick, nearly plane, solitary, pale-avellaneous, darker at the center, dull, glabrous, smooth, thin and slightly decurved on the margin; lamellae adnate, close, about 2 mm. broad, avellaneous when looked at perpendicularly; veil forming an ample, white, superior, persistent annulus; stipe central, terete, enlarged below, crooked, white at the apex, hygrophanous and longitudinally streaked below, 5 cm. long, 4 mm. thick; spores ellipsoid, truncate at one end, 8.5–10 × 4.5–5.5 μ; cystidia rather numerous, flask-shaped, projecting conspicuously.

TYPE LOCALITY: Morce's Gap, Jamaica.
HABITAT: On the ground.
DISTRIBUTION: Known only from the type locality.

47. **Pholiota Broadwayi** Murrill, Mycologia 5: 32. 1913.

Pileus 1–3 cm. broad, thin, convex to expanded, solitary, nearly white to pale-isabelline, slightly darker at the center, glabrous, moist or slightly viscid, thin, concolorous, and entire on the margin; lamellae adnate or adnexed, crowded, slightly ventricose, 2–3 mm. broad, pale-fulvous; stipe central, terete, equal, concolorous, glabrous, hollow, 4–7 cm. long, 2–3 mm. thick; veil forming a superior, membranous, evanescent annulus; spores ovoid with a truncate base, smooth, 12–14 × 8–9 μ; cystidia present but rare, enlarged at the base, with a tapering projecting tip, hyaline.

TYPE LOCALITY: Grenada, West Indies.
HABITAT: On the ground.
DISTRIBUTION: Known only from the type locality.

48. **Pholiota Musae** (Earle) Murrill, Mycologia 5: 34. 1913.

Pholiotina Musae Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 241. 1906.

Pileus 1–4 cm. broad, convex to expanded, pale-fuscous to tan, hygrophanous, striate on the margin and at length upturned; lamellae adnexed, crowded, becoming ventricose, subconcolorous to darker; veil soon evanescent, sometimes no ring formed; stipe central, equal, glabrous, shining, white, hollow, 4–6 cm. long, 3–6 mm. thick; spores ellipsoid or narrow-ellipsoid, nearly hyaline, smooth, 17–19 × 7–9 μ; cystidia none.

TYPE LOCALITY: Santiago de las Vegas, Cuba.
HABITAT: On dead banana stalks.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL AND EXCLUDED SPECIES

Pholiota Aegerita Briganti. Harper's plants so determined by Atkinson seem to belong better under *P. aeruginosa* Peck. Hard, if his description is drawn from the actual specimens, may have had the plants. The species is included in this paper on the basis of Kauffman's report.

Pholiota appendiculata Peck, Bull. N. Y. State Mus. 94: 33. 1905. Equals *P. ornella* Peck, which is referable to *Flammula polychroa* Berk.

Pholiota aurea (Schaeff.) Gill. Champ. Fr. 435. 1876. *P. spectabilis* seems to cover all American material that might otherwise be referred to this species.

Pholiota caperata (Pers.) Gill. Champ. Fr. 435. 1876. See *Rozites*.

Pholiota dactyliota (Berk. & Mont.) Sacc. Syll. Fung. 5: 750. 1887. (*Agaricus dactyliotus* Berk. & Mont.; Mont. Syll. Crypt. 115. 1856.) Described from plants collected in Ohio by Sullivant, and said to be similar to *P. squarrosa*.

Pholiota dura (Bolt.) Quél. Champ. Jura Vosg. 91. 1872. (*Agaricus durus* Bolt. Hist. Fung. *pl. 67, f. 1.* 1788.) A species reported in every list of fleshy fungi issued in America. All collections examined belong as well under *P. vermiflua* Peck which will probably be found to be a synonym of *P. dura*. Europeans are far from an agreement as to the limits of the species and Peck's name may be used for the present.

Pholiota erebia (Fries) Gill. Champ. Fr. 432. 1876. Reported several times from America. All specimens I have seen are referable to *P. aggericola* Peck or *P. ombrophila* Fries. European workers are not in accord as to the microscopic characters of the plant, though probably *P. aggericola* will eventually be retired in favor of *P. erebia*.

COMPLETED VOLUME

9: i–iv, 1–542. (Agaricales:) Polyporaceae (pars), Boletaceae, Agaricaceae (pars). Complete in 7 parts.

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